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Linkages between emotional intelligence and coping strategies in mastering new educational technologies

by

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Abstract

Technology-enhanced learning environments such as blended learning and e-learning are utilised increasingly in higher education institutions with expectations of an increase in output rates and retention rates. As the demand for technology-enhanced e-learning courses increases, the pressure on lecturing staff to rise to the challenge also increases. In recent years great advances and improvements in the fields of learning and instruction were envisaged as a consequence of the application of new educational technologies. Although some of these promises have materialised it would seem that relatively few lecturers have mastered the skills and knowledge needed to integrate technology successfully into the practice of teaching and learning. The role of emotional intelligence is a significant construct which has not been adequately researched in terms of the mastering of new technologies in the e-learning and blended learning environments.

The purpose of the study is to explore and describe linkages between emotional intelligence and the ability to cope with mastering new educational technologies. It is presumed that this study may contribute towards a deeper understanding of emotional intelligence as a moderator of work stress and of the stress encountered in mastering new educational technologies with subsequent coping strategies. With its contribution to this emergent body of knowledge, the significance of the study lay in the clarification of the role of emotional intelligence in mastering new educational technologies.

The case study is based on the 2004 participants in the Partners@Work programme at the Department of Telematic Education at the Tshwane University of Technology. The unit of analysis provided rich and detailed data for this study. A mixed methods approach, that is, the use of both qualitative and quantitative data, assisted in crystallising the data in order to provide insight into the way participants coped with the mastering of new educational technologies.

Findings from this study suggest that a number of factors influence coping strategies when attempting to master new technologies, including self-efficacy beliefs, social networking structures as a resource, the use of positive emotions, the role of the facilitator and the emotional intelligence abilities associated with coping competencies. While a number of linkages between emotional intelligence and coping strategies could

be identified, the interdependency of coping strategies and emotional intelligence remains elusive.

The study recommends that institutions should create a supportive organisational climate for e-learning as a support for face-to face training programmes in skills development. The provision of programme facilitators trained in coaching participants, focusing on the accomplishment of self-directed learning, assisting participants in the attainment of goals, modelling positive emotive skills, and encouraging the practice of new skills may help to realise the promise of blended learning.

Keywords:

emotional intelligence
coping strategies
educational technologies
e-learning
self-directed learning
blended learning
self-efficacy
positive emotions
training programmes
facilitator

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Deo Gloria

Dedication: *This study is dedicated to the memory of my late father who inspired me to use my mind and intellect to the best of my ability.*

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List of terminology

E-learning terms

Term	Definition	Source
Distance learning	“Education provided through learning resources such as articles, learning guides and supplementary media. In distance learning the educator and student are separated by space and/or time. Distance education is extremely diverse, ranging from classic correspondence study to collaborative, internet-enhanced multimedia education”.	Nichols, 2007a,.p. 3.
E-learning, eLearning, (e)learning	“The use of technological tools (primarily those that can be made available over networks such as the internet) for education. E-learning is pedagogy that is empowered by technology. It may be offline (and non-networked) technologies on CDROM or DVD. E-learning usually includes digital resources and computer-interfaced communications as tools for learning”.	Nichols, 2007a,.p. 3.
Interactive	“Can mean anything from the ability to click on a link to another webpage, through to full interpersonal discourse. This term must always be considered in context”.	Nichols, 2007a,.p. 4.
Learning Management System (LMS)	“A collection of e-learning tools available through a shared administrative interface, such as Blackboard, WebCT, or Moodle. An LMS or VLE is the platform on which online courses or online components of courses are assembled and made available”.	Nichols, 2007a,.p. 4.



Flexible/mixed-mode/blended/resource-based learning “These terms all describe education that combines on-campus and distance approaches. Such education usually involves an instructor or tutor meeting with students (either on campus or using technology), coupled with a resource base of content materials and learning activities. Some e-learning approaches might be used as part of this mix. It includes conventional on-campus courses supplemented by some e-learning”. Nichols, 2007a,.p. 4.

Online learning “Pure online learning uses e-learning tools in a distance education mode. It uses technology (usually the internet) as the sole medium for all student learning and contact. The term is often used synonymously with the terms immediately above; however, it is best to reserve it to describe education facilitated only through digital technology, usually the internet. An online course typically lacks both physical learning materials and physical meetings, but the term is also used to describe the online component of an on-campus or distance education course. The term is sometimes used to refer to CD-Rom- or DVD-based courses as well as web-based ones”. Nichols, 2007a,.p. 4.

“The art and science of effective teaching. Pedagogy is traditionally understood to refer to the instruction of children but it is increasingly used in a more general sense that encapsulates ... concepts of andragogy”. Nichols, 2007a,.p. 4.

Psychological terms

Term	Definition	Source
Appraisal	“Appraisal has to do with the individual’s evaluation of the personal significance of a given event and the adequacy of the individual’s resources for coping”.	Folkman & Greer, 2000, p. 12.



Broaden-and-build theory	Broadened mindsets created by positive emotions, carry adaptive benefits in the sense that it encourage new lines of thought and action. Through the experience of positive emotions, individuals can transform themselves, becoming more creative, knowledgeable and resilient.	Fredrickson, 2005, .p. 123.
Cognitive Appraisal	“Cognitive appraisal is an evaluative process that determines why and to what extend a particular transaction or series of transactions between the person and the environment is stressful”.	Lazarus & Folkman, 1984. p. 19.
Coping	“Coping is the process through which the individual manages the demands of the person-environment relationship that are appraised as stressful and the emotions they generate”.	Lazarus & Folkman, 1984, p.19.
Emotion	“Emotions typically arise in response to an event, either internal or external, that has a positively or negatively valenced meaning for the individual”.	Salovey & Mayer, 1990, p. 186.
Emotional intelligence (EI)	“The ability to perceive, appraise, and express emotion; to access and/or generate feelings when they facilitate thought; to understand emotion and emotional knowledge; and to regulate emotions to promote emotional and intellectual growth”.	Mayer & Salovey, 1997, p 10.
Emotional Coping Hierarchy	“Facilitating the application of emotional intelligence to the coping process”.	Salovey, Bedell, Detwiler, & Mayer, 1999, p. 146.
Intelligence	Intelligence refers to the ability to reason with or about something, comparing and contrasting different ideas.	Mayer & Caruso, 2002.
Primary appraisal	The possibility of the event being a potential stressor or threat is established by the primary appraisal.	Folkman & Greer, 2000.



Process model of affective response	This model provides an explanation of the way emotional intelligence serves as a moderator of stress experienced in the workplace.	Ashkanasy, Ashton-James, & Jordan, 2004, p. 29.
Secondary appraisal	The probability of the outcome being positive or negative, is established by the secondary appraisal.	Folkman & Greer, 2000.
Self-efficacy	“Human functioning is facilitated by a personal sense of control. If people believe that they can take action to solve a problem instrumentally, they become more inclined to do so and feel more committed to this decision”.	Schwarzer, 1992, p. ix.
Stress	“Psychological stress is a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being”.	Lazarus & Folkman, 1984, p. 19.
Social Cognitive Theory (SCT)	The Social Cognitive Theory (SCT) of Bandura offers an extensive framework for understanding human functioning and motivation in different contexts. Within SCT, self-efficacy is a key construct as Bandura posits that “self-beliefs of efficacy influence how people feel, think and act”.	Bandura, 1997.
Re-appraisal	Re-appraisal is a follow-up on an earlier appraisal and where a change is deemed necessary based on new information gained from the environment.	Folkman & Greer, 2000.
Resilience	Psychological resilience entails having the ability to bounce back from negative experiences, being flexible in adapting to demands in a stressful situation.	Tugade & Fredrickson, 2004.



List of abbreviations

AVA	Avoidant actions
CCSC & HICUPS	Children's coping strategies checklist & How I coped under pressure scale
CDM	Cognitive decision making
CON	Control
DA	Distracting actions
DPS	Direct problem solving
EI	Emotional Intelligence
MSCEIT™	Mayer–Salovey–Caruso Emotional Intelligence Test™
OER	Open Educational Resources
OPT	Optimism
POS	Positivity
REP	Repression
RSS	Real Simple Syndication
SU	Seeking understanding
SUPA	Support seeking actions



List of educational technologies

Technology	Application
Blogger	Hosts blog accounts
Camtasia	Screen recording software
CorelDraw	Software for creating graphics
FrontPage	HTML editor
Perception	Assessment software
Respondus	Assessment software
RSSfeed	Publish frequently updated content such as blog entries
Video	Recording of visual images
Video conferencing	Real time video session
Weblog	Public assessable web page serving as a personal journal
WebCT	Learning management system
Yahoo Messenger	Instant messaging service, including voice calling, text messaging and file sharing



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Chapter 1: Orientation

The emotions are of quite extraordinary importance in the total economy of living organisms and do not deserve being put into opposition with 'intelligence'. The emotions are, it seems, themselves a high order of intelligence.
(Mowrer, 1960, p. 308)

1.1 Introduction

The purpose of this study is to explore and describe linkages between emotional intelligence and the ability to cope with mastering new educational technologies. Chapter 1 serves as an orientation to the study and I begin the chapter by sketching the background. This is followed by a discussion of the context of the study, with a presentation of the problem statement and rationale, followed by the purpose and significance of the study. Subsequently I give an overview of the research design and methodology, concluding this chapter with an outline of the organisation of the study.

1.2 Background

In a world in which technology is changing on a daily basis, new training courses are continually introduced in the workplace and in higher education institutions. Lifelong learning is no longer a dream, but has become an essential requirement in the striving towards professional development. In order to meet this requirement of lifelong learning, technology-enhanced learning environments, such as blended learning and e-learning, are utilised more and more in higher education. These technology-enhanced learning environments make use of the swiftly growing and expanding potential of technology (Beller & Or, 1998; Bonk, Kim, & Zeng, 2006b; Moore, Fowler, & Watson, 2007; Oliver, Herrington, & Reeves, 2006; Souleles, 2004; Surry, Ensminger, & Jones, 2005). In recent years great advances and improvements in the fields of learning and instruction were envisaged as a consequence of the application of new educational technologies (Ensminger, Surry, Porter, & Wright, 2004; Moore *et al.*, 2007; Oliver *et al.*, 2006; Rubenstein, 2003; Souleles, 2004; Spector, 2001).

Although some of these promises have materialised it would seem that relatively few lecturers have mastered the skills and knowledge needed to integrate technology successfully into the practice of teaching and learning (Moore *et al.*, 2007; Spector, 2001). Despite the fact that tools for e-learning are generally in place, a typical critique against e-learning is a feeling of unease in terms of technology, and this has a negative

effect on the attainment of learning outcomes. The role of emotional intelligence is a significant construct which has not been adequately researched in terms of the mastering of new technologies in the e-learning and blended learning environments (Hill & Rivera, 2001). A great deal of excitement has been generated over the last few years by the proponents of emotional intelligence who have forwarded compelling arguments in favour of the extent to which emotional intelligence may enhance workplace performance and career success (Caruso, 2006; Lam & Kirby, 2002; Lopes, Côté, & Salovey, 2006; Mayer, 2006; Quinn, 2006; Salovey, Brackett, & Mayer, 2004). In his turn, Redden (2003, p. 4) has stressed the importance of emotions in the context of the e-learning classroom:

Though our classes may physically consist of electrons on a computer screen, there are real people involved. That means emotions are present. Instructors and course developers who endeavour to do well in the cyber setting need to engage students in new ways as well as adapting those ways successful in the traditional classroom. Our best practices in cyber space all relate to connecting the learner positively to learning itself, the content, the technology, to ourselves as instructors, and to peers in the classroom. These connections work best when we consciously address the role of emotions in learning in the cyber classroom.

E-learning guru Clark Quinn argues that the emotional and cognitive components of the learning experience are equally important. He proposes that, in addition to improving learning outcomes, emotional experiences should be enhanced in order to optimise the learning experience (Quinn, 2005; Quinn, 2006). O'Regan (2003) concurs with Quinn when he reasons that, as emotions play a vital role in the teaching and learning process, they should be addressed equally in the theory and practice of teaching and learning. As new educational technologies become an integral part of the teaching and learning process, more research and exploration is needed to clarify the role of emotions in informing best practice (O'Regan, 2003).

It was against this background, while working as an instructional designer facilitating the use of educational technologies, that I became intrigued by the different ways in which lecturers respond to new technologies. Whilst certain individuals appear to cope naturally and easily, others seemed to encounter serious problems. My interest in emotional intelligence as a moderator of work stress grew and the research idea was born.

1.3 Context of the study

The context of the study is presented in this section. Section 1.3.1 pertains to the unit of analysis of the study, the 2004 Partners@Work programme at the Tshwane University of Technology. In order to place this study within the broader context of the different constructs from which I intend to draw during the study, § 1.3.2 endeavours to a brief overview of e-learning and blended learning, educational technologies, the mastering of new educational technologies, emotional intelligence, coping and positive psychology.

1.3.1 Partners@Work programme

The Department of Telematic Education at the Tshwane University of Technology proactively introduced the Partners@Work programme in June 2004. The programme focussed on the development of technology-enhanced courses, addressing challenges for example low pass rates, large groups and geographically dispersed learners (Van Ryneveld & Van der Merwe, 2005).

The programme consisted of a professional development programme in three phases, namely

- the design and development phase (June 2004- December 2004); ;
- implementation phase (January 2005- June 2005), and
- an action research project (June 2004- June 2005) (Van Ryneveld & Van der Merwe, 2005).

During the design and development phase, Partners predominantly spend their time on the programme, actively developing technology-enhanced teaching and learning materials for a specific course. An expert team consisting of programmers, instructional designers, curriculum designers, student development officers, quality experts, graphic designers and video editors assisted the Partners with the course development. For the duration of this time, the Partners were involved in a capacity building strategy, involving:

- a block face-to-face session (2-24 June);
- weekly contact sessions, and

- an online training course (Van Ryneveld & Van der Merwe, 2005).

During the block session in June and the subsequent weekly contact sessions, Partners spent time networking with the other Partners. They shared ideas, discuss progress, asked and answered questions pertaining to their developmental activities and took part in workshops and hands-on work sessions, facilitated by experts (Van Ryneveld & Van der Merwe, 2005). Partners stayed in contact and interacted with one another between the face-to-face sessions, using Yahoo messenger, becoming part of an on-line support community.

The Partners were introduced to Blogger, for use as an online reflective diary. They were asked to reflect after each contact session on what they enjoyed or found useful, what they did not enjoy or found useful, what they would change about the session and how they would change it. At this stage, the instructional designers made use of comments on Blogger, to improve the programme. The instructional designers intended using the reflective diaries in research.

The Partners consisted of 14 lecturers at the Tshwane University of Technology, four male and 10 female lecturers. For all of them English was a second language, with Afrikaans, Tswana and Persian being their first languages. The training levels of the participants ranged from a BTech and an MTech to a Doctorate in Physical Education. The Partners were assigned to one of the four instructional designers, including the myself.

As one of the instructional designers, the researcher was closely involved with the Partners over this period of one year and could relate to the demands of the programme in terms of homework and tasks. Being an "insider" in the programme enabled the researcher to reach some level of understanding (*verstehen*) of the way participants interacted with the educational technologies. Moreover to have empathy in the sense of understanding their feelings and experiences while mastering the new educational technologies (Patton, 2002). The researcher was thus able to interpret the data relevant to the study in the particular context.

1.3.2 E-learning and blended learning

The terminology used in e-learning is often very confusing, as terms such as blended learning, flexible learning and mixed-mode learning are often used as synonyms, in

exactly the same way that elearning, e-learning, and eLearning are also used synonymously (Nichols, 2007a). See list of terminology, p. xviii.

The definitions of e-learning vary. Netteland quotes Rosenberg (2001) when he refers to e-learning as “the use of internet technologies to deliver a broad array of solutions that enhance knowledge and performance” (2004, p. 2). A definition of e-learning with which I concur is that of Nichols (2007a, p. 2): “E-learning is pedagogy empowered by technology.”

As e-learning is a combination of electronic, *e*, and *learning*, the emphasis is placed on the pedagogy that directs the technology (Nichols, 2007a). For best practice in e-learning the ideal seems to be effective and sound pedagogy combined with reliable, user-friendly technology. Therefore, “e-learning is *dependant* on the pedagogy”, which, in turn, implies that the technology will be ineffective if the pedagogy is not sound (Nichols, 2007a, p. 2). Similarly, if the technology is neither easy to use nor reliable, “e-learning will be an exercise in frustration” (Nichols, 2007a, p. 3).

E-learning has vast potential and offers challenges and opportunities for developing effective educational applications (Nichols, 2007c; Oliver *et al.*, 2006). Blended learning is a combination of e-learning and face-to-face settings, and makes use of the advantages of both contexts in order to attain learning that “really works” (Netteland, 2004, p. 2).

Bonk and Graham (2006a) place blended learning in a international context when they note the accelerated growth in blended learning, as documented in the edited book *Handbook of blended learning: Global perspectives, local designs*, in places such as Microsoft, IBM, the University of Pretoria, the University of Glamorgan, Beijing Normal University, the National University of California, and the Open University of Malaysia. Blended learning has become an established delivery mode, not only in higher education, but also in the corporate world. In response to the trends and issues introduced in literature about blended learning, Bonk, Kim and Zeng (2006b) conducted two surveys on the future of online teaching and learning. The first survey targeted higher education settings, while the second survey targeted corporate training environments. Certain of the findings of their studies will be discussed and compared with recent arguments in the literature, as they gave a significant resonance with the rationale for conducting this study.

1.3.2.1 Future growth of blended learning

Respondents from surveys in both the higher education and the corporate world indicated the use of blended learning in some form or the other. In both these surveys a significant increase in the use of blended learning in upcoming years was reported (Bonk *et al.*, 2006b). These findings correspond with findings published by other researchers (Albright & Nworie, 2008; Bell, Martin, & Clarke, 2004; Netteland, 2004). Bonk *et al.* (2006b, p. 554) warn that “given this significant adoption of blended learning in both higher education and corporate training settings, it is vital to create strategic plans and directions for it”.

1.3.2.2 Pedagogical techniques in e-learning

With pedagogy and technology being mutually important in general e-learning trends, Bonk *et al.* (2006b) call for a focus on these two issues as they will both be employed in blended learning environments. Their higher education survey found that, during the forthcoming decade, the preferred instructional methods would be online collaboration, problem-based learning and case learning. Likewise, the corporate survey respondents envisaged the use of authentic cases and scenario learning, virtual team collaboration, problem-based learning and coaching or mentoring in the decade to come. Simulations and gaming emerged as more popular techniques in the corporate survey than in the higher education survey. In both surveys it seemed that the preferred methods involved active learning, problem solving, authentic learning and collaboration (Bonk *et al.*, 2006b). These findings resonate with arguments proposed in recent articles (Brown & Adler, 2008; Moore *et al.*, 2007). It is envisaged that hands-on learning, which is judged to be the weakest link in online learning courses at present, will constitute one of the most significant aspects in e-learning courses in the coming decade (Bonk *et al.*, 2006b; Brown & Adler, 2008; Moore *et al.*, 2007).

1.3.2.3 Emerging educational technologies

Just as it is not possible to detach e-learning from the pedagogy that supports it, neither can e-learning be separated from the technologies that make it possible (Nichols, 2007a). The numerous technologies currently available for use in blended learning settings are bound to proliferate in the next decade.

In order to assist in understanding the way in which emergent technologies may influence the delivery of e-learning in the coming years, Bonk *et al.* asked participants to choose one technology from the 14 listed that, in their view, would have the most impact on online education (Bonk *et al.*, 2006b). Respondents from the higher education environment envisaged that reusable content objects would have the most important impact, followed by wireless technologies, and then by peer-to-peer collaboration tools, digital libraries, simulations and games, assistive technologies and digital portfolios (Bonk *et al.*, 2006b).

These findings emphasise the significance of sharing content in teaching and learning in online environments as indicated by various authors (Barth, Godeman, Rieckmann, & Stoltenberg, 2007; Bell *et al.*, 2004; Beller & Or, 1998; Brown & Adler, 2008; Moore *et al.*, 2007). A significant finding from this study is that less than five per cent of the respondents predicted that the use of e-books, intelligent agents, tablet PCs, virtual worlds, language support or wearable technologies would have an important impact on the delivery of online learning in the context of higher education (Bonk *et al.*, 2006b). Bonk *et al.* noted, “those involved in online learning within higher education may be in for a surprise in the area of wearable and augmented reality technology” (Bonk *et al.*, 2006b, p. 558). A reason for these finding may either be the novelty of certain of these technologies, or the fact that lecturers already feel overwhelmed by the technologies available (Bonk *et al.*, 2006b).

Corporate respondents predicted the that use of knowledge management tools would be significant in the forthcoming years, followed by online simulations, wireless technologies, reusable content objects, and adaptive technologies (Bonk *et al.*, 2006b). Van ‘t Hooft and Vahey (2007) are in agreement with these arguments when they conclude that future technology tools will be predominantly personal, mobile, networked and connected to the internet, accessible, flexible, social, multimodal and contextual.

What is important for this study is the continuous change in technology, as expressed by Nichols: “As technology continues to evolve, so will the tools that can be used for e-learning. However, uptake of technology and the contextual dynamics within which education is offered seem to be the dominant variables to consider when predicting where e-learning might take us (2007a, p. 13).”

These findings, underscored by the reasoning and arguments of various authors (Albright & Nworie, 2008; Aspden & Moore, 2004; Brown & Adler, 2008; Derntl & Motschnig-Pitrik, 2003; Dwyer, 2002; Moore *et al.*, 2007), emphasise the change in learning environments in terms of student needs, pedagogical preferences and the opportunities opening up with the availability of new educational technologies.

1.3.2.4 Future trends in blended learning

Literature on blended learning shows that, in most cases, current use of blended learning entails either the replacement or the extension of face-to face settings (Bonk *et al.*, 2006b; Moore *et al.*, 2007; Netteland, 2004). Bonk *et al.* (2006b) list the fostering of learning communities, extension of training events, resources for a community of practice, accessing guest experts, provision of timely mentoring, presentation of online laboratory or simulations, and the delivery of course materials, as current uses of blended learning. With online environments entering the “second decade of extensive use in higher education” Bonk *et al.* predict “that the forms and formats of blended learning will (be) extended as well” in the next decade or two (2006b, p. 560).

The next section contains a discussion of the ten trends predicted by Bonk *et al.* (2006b). These trends will be corroborated by arguments of other authors, as these predictions underscore the rationale for this study.

1.3.2.4.1 Mobile blended learning

In the next two decades handheld devices will be involved more and more in blended learning (Bonk *et al.*, 2006b). Bonk *et al.* state that the use of mobile phones, in particular, will increasingly entail the calling up of learning as needed. This implies that, with the increased use of mobile and wireless technologies, “the time and place for learning, working, and socialising will blur even more” (Bonk *et al.*, 2006b, p. 561). An important implication for this study is that mobile and wireless technologies may create greater opportunities for lifelong learning, as learning will be more accessible to a wider range of individuals (Bonk *et al.*, 2006b). These predictions are in line with the opinions of Van ‘t Hooft and Vahey (2007), Brown and Adler (2008), Dede (2004) and Kennedy, Krause, Churchward and Gray (2006).

1.3.2.4.2 Greater visualisation, individualisation and hands-on learning

With the added mobility, as described in the previous paragraph, Bonk *et al.* predict that learning will become more individualised, hands-on and visual. This prediction is supported by their survey data, which showed that blended learning will support a bigger range of learning styles and individual differences in future (Bonk *et al.*, 2006b). Brown and Adler underscore this prediction when they state that the latest evolution of the internet, Web 2.0, “is creating a new kind of participatory medium that is ideal for supporting multiple modes of learning” (2008, p. 18).

1.3.2.4.3 Self-determined blended learning

Bonk *et al.* (2006b) predict that “as the options for blended learning proliferate, blended learning will increasingly address individual needs while becoming a highly complex decision making process”. In this context, Sharples (2000) quotes the UK Government’s Green Paper on lifelong learning:

In future, learners need not be tied to particular locations. They will be able to study at home, at work, or in a local library or shopping center, as well as colleges and universities. People will be able to study at a distance using broadcast media and on-line access. Our aim should be to help people learn wherever they choose and support them in accessing how they are doing and where they want to go next.

1.3.2.4.4 Increased connectedness, community, and collaboration

A strength of blended learning is the opportunity it affords to connect people, activities and events (Bonk *et al.*, 2006b). With increased individualisation, Bonk *et al.* predict that blended learning will promote collaboration, and contribute to greater connectedness and global awareness (2006b). Van ‘t Hooft and Vahey (2007) agree when they state that future tools will be predominantly social, allowing collaboration, sharing, creating, aggregating and connecting knowledge. In confirmation of this, Laird and Kuh (2005, p. 232) report that the findings of their study suggest that the investments in making information technology available to students are paying off as is indicated by the active and collaborative engagement of the students in educational practices.

Moore *et al.* (2007) discuss the possibilities of using tablet PCs for sharing information among students, as well as for problem-solving and problem-posing exercises in large

or small group settings. Blogs and Wikis could assist with the development of collaboration and communication skills. Downes (2006) outlines his thinking around “the new and newly empowered learner” when he describes how the web changed from “being a medium, in which information transmitted and consumed, into being a platform, in which content was created, shared, remixed, repurposed, and passed along”. With the advent of Web 2.0 comes E-learning 2.0 which, according to Downes, is “not a single application, but a collection of interoperating applications – an environment rather than a system” (2006). Downes (2006) argues that E-learning 2.0 has the potential to empower students in a completely new way. Brown and Adler (2008, p. 18) concur and argue that “the most profound impact of the Internet, an impact that has yet to be fully realized, is the ability to support and expand the various aspects of social learning”.

1.3.2.4.5 Increased authenticity and on-demand learning

With the fast-changing job requirements and expectations, Bonk *et al.* predict that on-demand learning will become a requirement of a global workforce (2006b). The web will be used to provide timely, authentic information for the solving of case problems. The present trend towards problem-based learning, scenario learning and online case-learning will continue, with the pedagogy employed and the learning results as the most important aspects rather than the actual technology used (Bonk *et al.*, 2006b).

Brown and Adler (2008, p. 18) argue that “the most visible impact of the Internet on education to date has been the Open Educational Resources (OER) movement which ensured the free access to an extensive range of learning materials. Use of the internet has enabled students to access powerful instruments and simulation models (Brown & Adler, 2008, p. 18).

1.3.2.4.6 Linking work and learning

With the employment of new educational technologies the differentiation between formalised learning environments and workplace training will continue to narrow (Bonk *et al.*, 2006b). Bonk *et al.* (2006b, p. 563) argue that the “greying of lines between training and formalised learning will be caused by blended learning as much as it will cause new avenues for it”. It will become commonplace for a student in a work setting who is reporting on a weekly or daily basis to use web cams, asynchronous discussions, instant messaging, desktop videoconferencing, and wearable computing

devices (Bonk *et al.*, 2006b). In support of this prediction, Brown and Adler (2008, p. 32) note that the opportunities provided by the OER movement and E-learning 2.0 have created an environment for learning “that is suited for continuous, lifelong learning that extends beyond formal schooling”.

1.3.2.4.7 Changed calendaring

The increasing learning avenues will have an effect on the notions of when learning actually occurs, and this will result in learners being less bound to the traditional calendars for learning (Bonk *et al.*, 2006b). With the movement away from normal calendar and semester constraints, and with new learning blends becoming available, learners will take advantage of this new situation, and will complete learning experiences, courses, and degrees when time is available in their schedules (Bonk *et al.*, 2006b). Bonk *et al.* warn that, with learning time becoming less defined, administrators, lecturers and instructional designers should take cognisance of the “increased ambiguity when designing distance learning courses and programs” (Bonk *et al.*, 2006b, p. 563). “Learning will occur when the learner feels the need and has the time, not when the institution or organization has prearranged it” (Bonk *et al.*, 2006b, p. 563).

1.3.2.4.8 Blended learning course designations

An interesting prediction is that of an increase in courses with reduced classroom meetings or “seat time”, as universities come to the realisation that blended learning not only reduces “brick and mortar needs but simultaneously can increase learning outcomes” (Bonk *et al.*, 2006b, p. 563). The University of Central Florida already designates courses with reduced seat time as “M” courses (Bonk *et al.*, 2006b, p. 564). Brown and Adler caution that it is highly unlikely that sufficient resources will be available for the building of new institutions in the traditional way in order to meet the growing demand globally in higher education (Brown & Adler, 2008).

1.3.2.4.9 Changed instructor roles

The role of the lecturer or facilitator will continue to change with the increasing richness of the online environment. The evolution of blended learning highlights the instructional skills needed in these multiple teaching and learning environments (Bonk *et al.*,

2006b). Access to the facilitator will become vital as learners will seek support in terms of coaching, mentoring and counselling (Bonk *et al.*, 2006b). Derntl and Motschnig-Pitrik (2004, p. 916) conclude in the report on their research that “blended learning has added value only if designed thoughtfully and accompanied by high interpersonal skills of instructors”. Thus, the argument put forward by Dede that those institutions investing in the professional development of lecturers “will gain a considerable competitive advantage in both recruiting top students and teaching them effectively”, underscores the importance of the role of facilitators in blended learning environments (2004, p. 30).

1.3.2.4.10 Emergence of blended learning specialists

Blended learning demands more from facilitators than either fully online or face-to-face learning, as blended learning is multifaceted and typically more complicated (Bonk *et al.*, 2006b). Bonk *et al.* (2006b) predict that in the next few years blended learning facilitators will be extremely sought after, as they will possess skills pertaining to the traditional classrooms as well as virtual environments. Nichols (2007b, p. 12) contends that, if e-learning is “pedagogy empowered by technology”, facilitators in turn will need both pedagogical and technical skills.

These predictions and arguments highlight the necessity of educators possessing both the motivation and the skills to keep pace with changes in technology, “preparing their students for the lives they will lead in the twenty-first century” (Brown & Adler, 2008, p. 18).

1.3.3 Mastering new educational technologies

In terms of mastering and implementing new educational technologies, Moore *et al.* (2007, p. 44) comment on the resistance to the change aimed at integrating educational technologies into teaching and learning activities. According to them “one way to overcome such resistance is to lower anxiety through development programs designed to create new capabilities that people might find useful for personal, professional, or institutional reasons” (Moore *et al.*, 2007, p. 44).

As transformational learning is difficult to ensure it becomes imperative that safe environments be provided in which individuals are able to experiment with new educational technologies. Moore *et al.* report that, for at least the last ten years, universities and colleges across the United States have attempted to integrate

technology into teaching and learning activities (2007, p. 44). Some of the lectures in these institutions have become change agents within their own institutions, and have advocated the need to change.

According to Moore *et al.* (2007, p. 46) a review of the literature on development programmes reveals six best practices that could ensure the prolonged existence of the programmes and increase the probability of lecturers participating, learning and changing in due course. These practices are:

- proper management of institutional issues;
- the implementation of adult learning practices;
- incentives to participate;
- presentation of workshops;
- making use of colleagues and peers;
- provision of ongoing support (Moore *et al.*, 2007, p. 46).

Nichols contends that “major failures of e-learning in education tend to be due to failure in implementation rather than a fundamental flaw in e-learning itself, and ... it seems that e-learning’s further development relies on institutional investment and effective change strategies that engage the early and late majority of potential users – in this case, educators” (2007a, p. 18). The next section deals with the challenges lecturers in higher education face in implementing educational technologies for teaching and learning.

1.3.3.1 Challenges implementing educational technologies for teaching and learning

A widely cited researcher pertaining to the implementation of new educational technologies is Donald P. Ely (Ensminger *et al.*, 2004). Ely developed a strategy for implementing new educational technologies, comprising of eight conditions that seem to facilitate the successful implementation of new educational abilities (Ely, 1990). The conditions are dissatisfaction with the status quo, existence of knowledge and skills, availability of resources, availability of time, rewards for incentives, participation, commitment and leadership (Ely, 1999). Attempting to illustrate the challenges lecturers face implementing new educational technologies for teaching and learning, these conditions are used as a reference, with implementation indicating “ the process

of introducing an innovation into an organization and fostering its use” (Ensminger *et al.*, 2004, p. 62).

1.3.3.1.1 Dissatisfaction with the status quo

Being dissatisfied with the status quo relates to an affective state of discomfort because of the use of existing processes perceived as inefficient (Ely, 1999; Ensminger *et al.*, 2004). This feeling of discomfort may be self-induced or as a result of organisational awareness for the need of change (Ely, 1999; Ensminger *et al.*, 2004).

1.3.3.1.2 Existence of knowledge and skills

Ensminger *et al.* state that the existence of knowledge and skills refers to “possessing and or acquiring the needed skills and knowledge to employ the innovation” (2004, p. 64). Current feelings of self-efficacy as well as beliefs in the development of the necessary skills in terms of using the technology is also reflected by this condition (Ensminger *et al.*, 2004). Different researchers mention the importance of training as part of the implementation of new technologies, as different skills are required from facilitators in terms of social, pedagogical and technical skills (Dede, 2004; Ely, 1990; Ely, 1999; Ensminger *et al.*, 2004; Pajo & Wallace, 2001).

Spector (2001) asserts that too little consideration is given to the demands placed on the ability of lecturers to master the necessary knowledge and skills to effectively integrate new technologies into everyday learning and instruction. Stressing, “technology is not what learning is about ... learning is fundamentally about change” (Spector, 2001).

Salmon identified key competencies needed to be a successful e-moderator:

- An understanding of the online process, including personal experience as an online learner;
- Technical skills using the software;
- Online communication skills, engaging learners;
- Content expertise;
- Personal characteristics such motivation, adaptability, sensitivity, positivity and enthusiasm (2003, pp. 54-55).

Interestingly, Salmon also mentions emotional intelligence together with resilience and interpersonal sensitivity as qualities needed, concurring with Goodyear, Salmon, Spector, Steeples and Tickner (2001) that there are few people available with these competencies and abilities.

Reporting on “an analysis of the changed environment for teachers and learners in a post-graduate coursework programme based on constructivist principles that has moved from predominantly on-campus delivery to online mode”, Bennett and Lockyer assert that online teaching involves an added layer of complexity, raising issues of training and support that must be addressed (2004, p. 242).

Dede (2004) commented on the characteristics of students entering higher education, changed by the rapid advancement of information technology, putting pressure on lecturers to develop capabilities in co-design, co-instruction, guided social constructivist and situated learning pedagogies and assessment beyond tests and papers, in order to stay abreast of the changing learning styles of their students (Dede, 2004). Many lecturers may find this difficult, as they themselves need to develop “neomillennial” learning styles to persist in effective teaching as the nature of their students changes (Dede, 2004). Phelps, Graham and Kerr concur with this view, emphasizing the need for professional development focussing on lecturers’ “approaches to learning, their beliefs, attitudes and metacognitive understandings” (2004, p. 50). These authors point out the necessity of facilitating lectures “to engage in self directed and lifelong computer learning” (Phelps *et al.*, 2004, p. 50).

1.3.3.1.3 Availability of resources

Resources such as finances, hardware, software, materials, personnel and technical support are needed to implement any new technology (Ely, 1999; Ensminger *et al.*, 2004). Concerns related to organisational support were raised in the survey of Pajo and Wallace (2001). Issues such as lack of technical support, insufficient training and resources, and meagre teaching support were identified as barriers to the uptake of technology by academic staff (Pajo & Wallace, 2001).

1.3.3.1.4 Availability of time

Adequate time refers to organisations’ compliance providing paid time for learning to use the new technology, as well as the willingness of the user to devote time and

energy to develop new skills (Ely, 1999; Ensminger *et al.*, 2004). In their findings from a survey of staff about the barriers to the uptake of technology, Pajo and Wallace (2001) report that of the four most prohibitive barriers identified were related to issues of time. The time required to learn how to use a technology was identified as the most significant barrier, while the time developing and implementing online courses, was identified as an impediment to the use of technology in teaching. Likewise, the need to monitor online courses on a regular basis, was perceived as barrier to the effective use of online technology (Pajo & Wallace, 2001). In order to deploy e-learning platforms effectively, extra effort and commitment of lecturers are needed (Derntl & Motschnig-Pitrik, 2004).

1.3.3.1.5 Rewards or incentives exist

Rewards can either be extrinsic or intrinsic (Ely, 1999; Ensminger *et al.*, 2004). Hanson asserts that lecturers “need to see that putting effort into changing their teaching practice is valued and that effort is rewarded” (2003, p. 140). This author reports on several incentives used to encourage lecturers to adopt e-learning, with a focus on the need to value teaching activity on a equal footing with research” (Hanson, 2003, p. 146).

1.3.3.1.6 Participation

Participation pertains to which level stakeholders are involved in the decision making process that precedes the adoption and implementation of a new technology (Ely, 1999; Ensminger *et al.*, 2004). Intended users need to have a have a sense of ownership (Ensminger *et al.*, 2004).

1.3.3.1.7 Commitment

Commitment refers to the visible support of management as perceived by lecturers in terms of the implementation of a new technology (Ely, 1999; Ensminger *et al.*, 2004). Ensminger *et al.* proclaim that visible support on the side of management include the dedication of resources, personal communication, developing strategic implementation plans and dynamic involvement in implementing the new technology (2004, p. 64). A lack of commitment on the side of management denotes a serious barrier to implementation (Ensminger *et al.*, 2004).

1.3.3.1.8 Leadership.

Leadership relates to how important the managers of lecturers implementing a new technology view ownership of the implementation (Ely, 1999; Ensminger *et al.*, 2004). The motivation of lecturers is directly affected by the enthusiasm of line managers. Ensminger *et al.* (2004) stress the importance of the role of immediate supervisors during implementation of new technologies. The support, advice, encouragement and role modelling are of crucial importance assisting lecturers in the implementation of new technologies (Ensminger *et al.*, 2004).

The Partners@Work programme implemented at the Tshwane University of Technology aimed at equipping lecturers with the skills needed to develop technology-enhanced courses. The programme aimed not only at the development of technology-focused skills, but also at fostering a mindset that embraced new educational technologies as part of life-long learning, thus empowering lecturers to keep abreast of the changing landscape in education. Although all the conditions named by Ely (1999) were met in the programme, some of the Partners still had difficulties mastering new educational technologies. This observation supported the researcher considering emotional intelligence as a factor in the process of mastering new educational technologies.

1.3.4 Emotional intelligence

Interest in emotional intelligence was aroused after Salovey and Mayer (1990) first presented the construct. The ability model of emotional intelligence centres on the skill of a person in being able to recognise emotional information and to use this information in abstract reasoning (Caruso, Mayer, & Salovey, 2002). Ciarrochi, Forgas and Mayer (2006, p. xv) note that “the concept of emotional intelligence suggests that intelligence may understand emotion, and that emotion may facilitate intelligence”.

The definition of the Mayer and Salovey (1997, p. 10) model of emotional intelligence involves the “ability to perceive, appraise, and express emotion; the ability to access and/or generate feelings when they facilitate thought; the ability to understand emotion and emotional knowledge; and the ability to regulate emotions to promote emotional and intellectual growth”. Contrary to the emotional intelligence models of Bar-On and

Goleman,¹ in terms of which measurement is based on self-report, the model of Salovey and Mayer is an ability model. As the Mayer and Salovey EI model is the only model that tests the ability of an individual in terms of emotional intelligence skills, and not on self-report, this model was chosen for the purposes of this study.

Empirical support for the ability model of emotional intelligence is increasing and a body of knowledge on emotional intelligence is rapidly emerging (Mayer, 2006; Mayer, Salovey, & Caruso, 2004b). Various writers have commented on the possibilities of emotional intelligence: Zeidner, Matthews and Roberts (2006, p. 101) comment that emotional intelligence may indeed “contribute to handling challenging events successfully in a wide array of domains”. Mayer, Salovey, and Caruso (2000c) postulate that the concept of emotional intelligence may be useful in the study of human effectiveness and success in life and that there is scope for further studies. Interest in emotional intelligence has increased in the last few years (Ciarrochi *et al.*, 2006, p. xvi). Despite the importance of, and increasing interest in, little research has been done that links emotional intelligence with coping with new technologies in a blended learning environment.

1.3.5 Positive emotion and resilience

The role of positive psychology can be seen across a range of life domains, for example, in areas of performance, motivation, and achievement, in the workplace and relationships, and in its impact on health and well-being (Moore, 2002, p. 105).

Traditional research on emotion theory focused on the management of negative emotions, and did not take into the account the effect of positive emotions (Folkman & Moskowitz, 2000b; Fredrickson, 2005; Tugade & Fredrickson, 2001). Fredrickson developed the broaden-and-build theory in an attempt to clarify the adaptive benefits of positive emotions (Fredrickson, 2005; Fredrickson & Joiner, 2002; Fredrickson & Levenson, 1998; Fredrickson, Mancuso, Branigan, & Tugade, 2000). According to Fredrickson, broadened mindsets created by positive emotions carry adaptive benefits in the sense that new and adaptive lines of thought and action are encouraged (Fredrickson, 2005; Fredrickson & Levenson, 1998; Fredrickson *et al.*, 2000). The experience of positive emotions has the effect that individuals become more creative, knowledgeable and resilient (Tugade & Fredrickson, 2001). As a consequence, an incidental effect of the experience of positive emotions is the increase of personal

¹ See chapter 2 for a detailed discussion of the Bar-On and Goleman models of EI.

resources, and these resources may be tapped into when needed in stressful situations (Fredrickson, 2005; Fredrickson *et al.*, 2000; Fredrickson & Tugade, 2003; Tugade & Fredrickson, 2001).

Resilient individuals are described as having the ability to “bounce back” from adverse conditions to overcome negative experiences and to thrive on challenges (Glicklen, 2006; Grotberg, 2003). These descriptions correspond with the abilities pertaining to emotional intelligence in the sense that, according to the ability model of emotional intelligence, emotionally intelligent people are capable of understanding their emotions, –both positive and negative – are proficient in processing emotional information and have the ability to use these emotions when solving problems (Mayer & Salovey, 1993; Mayer & Salovey, 1995; Mayer & Salovey, 1997).

1.3.6 Coping, stress and emotions

The person’s effort to dissolve the adversity, to dampen its subjective impact, or to accommodate to the new life situation that the adversity brings with it, are the essence of coping – and of self-regulation (Carver & Scheier, 1999, p. 571).

The quest to understand the way in which individuals cope with stress is documented in a vast array of articles and books. Richard Lazarus’s seminal book, *Psychological stress and the coping process*, heightened interest in coping and stress (Frydenberg, 2002b). Since that time the majority of the research on stress and coping has focused on negative emotions (Folkman & Moskowitz, 2000b; Folkman & Moskowitz, 2004; Frydenberg, 2002b).

The effect of positive emotions on the outcome of the coping process in stressful contexts is an exciting new direction in research on the coping process (Folkman & Moskowitz, 2000b; Folkman & Moskowitz, 2004). Several writers have reported on the importance of a positive coping approach in dealing with stressful situations (Carver & Scheier, 1999; Folkman & Moskowitz, 2000a; Frydenberg, 2002a; Greenglass, 2002; Moore, 2002). In their review of relevant studies, Folkman and Moskowitz report on evidence indicating that positive emotions serve as a buffer against stress (Folkman & Moskowitz, 2000a; , 2000b). Fredrickson and colleagues (Fredrickson & Joiner, 2002; Fredrickson & Levenson, 1998; Fredrickson *et al.*, 2000; Fredrickson & Tugade, 2003) emphasised the interest in positive emotions when they reported on the adaptive affect

of positive emotions in stressful situations. What is important for this study is that these findings suggest the significance of positive emotions in terms of coping strategies.

Zeidner, Matthews and Roberts (Zeidner *et al.*, 2006, p. 100) comment on the paucity of research on emotional intelligence and state “Research on EI has often neglected the extensive and well-established literature on stress, emotion and coping”. These authors reiterate this, while at the same time they examine the opposite pole when they state “viewed from another perspective, however, existing stress research may actually have missed something important about individual differences, which is captured by emerging models and measures of EI” (2006, p. 100).

1.3.7 Emotion in the workplace

Understanding emotions in the workplace settings and the role of emotions in organisational settings are issues that are gaining attention (Ashkanasy, 1997; Ashkanasy, 2002; Ashkanasy & Dasborough, 2003). Jordan and colleagues address the role of emotional intelligence as a moderator in the way individuals cope with stressors at work (Jordan, 2004; Jordan, Ashkanasy, & Hartel, 2002; Jordan, Ashkanasy, & Hartel, 2003). As a further development, Ashkanasy, Ashton-James and Jordan propose a model that provides a deeper understanding of the mechanisms underlying coping and emotional intelligence (2004). Their model has implications for further research in the sense that it provides a framework for studying coping strategies and the role of emotional intelligence.

This study will draw from the constructs “emotional intelligence”, “positive emotions”, “resilience”, and “stress” and “coping”.

1.4 Problem statement and rationale

Typical statements in the literature pinpoint the changing landscape in higher education. As the demand for technology-enhanced online courses increases, the pressure on lecturing staff to rise to the challenge will also increase.

The latest evolution of the Internet, the so-called Web 2.0, has blurred the line between producers and consumers of content and has shifted attention from access to information toward access to other people. New kinds of online resources – such as social networking sites, blogs, wikis, and virtual communities – have allowed people with common interests to meet, share ideas, and collaborate in innovative ways. Indeed, the Web 2.0 is creating a new kind of participatory medium that is ideal for supporting multiple modes of learning (Brown & Adler, 2008).

Students nowadays live in a different world in which different media facilitate the access of information in different ways (Van 't Hooft & Vahey, 2007). Van 't Hooft and Vahey propose that the students of today prefer:

- “quick and open access to information that is networked/hyperlinked;
- actively networking and communicating with many others;
- current digital tools over print;
- multimedia before text;
- just-in-time learning that is relevant and useful;
- expressing their creativity” (2007, p. 4).

It is my contention that these preferences of students have important implications for this study because, if lecturers keep pace with the upcoming generation, they may perhaps be able to stay connected to their students. Therefore, a possible way in which to address approaches to teaching and learning could be the use of educational technologies to ensure a better fit with the students of today and their needs (Van 't Hooft & Vahey, 2007). Aspden and Moore (2004, p. 6) found that students are apparently “capable of coping and adapting to the challenges and opportunities of e-learning”. They state that the challenge to lecturers is that they should ensure that they are doing the same.

A lack of the necessary skills, and new technologies that are not intuitive to use may cause anxiety and stress (Lawless & Allan, 2004). Dwyer (2002, p. 265) points out the necessity for training in order to be able to utilise those strategies that will assist in achieving learning outcomes. He urges the re-examining of our training methods to ensure that we adopt brain-based learning (Sylvester, 1995), multiple intelligence (Gardner, 1993) and emotional intelligence (Mayer & Salovey, 1997) in order to provide the most advantageous learning environments.

As the drive towards e-learning in higher institutions increases, with expectations of an increase in input rates and retention, the successful mastering of new technologies is becoming more and more crucial (Berge & Huang, 2004).

Science and technology are the crucial structural driving forces in all societal spheres. Sustainable development is the ethically founded response to a worldwide process in which not only research is increasingly carried out on the basis of private and economic interests but where these interests are also shaping the profile of academically educated young people (Barth et al., 2007, p. 416).

In their article on the development of key competencies for sustainable development in higher education, Barth *et al.* (2007, p. 416) state that, seen against the backdrop of globalisation, “acquiring relevant competencies within and by academic work cannot be a private concern of faculty, staff or administration. Absolutely essential is a new learning culture which does not confirm academic tradition, but examines its potential for a sustainable future, in an open-minded and participative process”.

Bonk *et al.* (2006b) spell out the role that lecturers will play as the emerging blended learning specialists in the next decade. Not only will it be expected that these lecturers possess skills in the traditional classroom settings, but, as is important for this study, also those skills which are necessary for virtual environments (Bonk *et al.*, 2006b). Spector (2001) cautions that, over the past years, little consideration has been given to those abilities needed by lectures to integrate new educational technologies into teaching practices effectively. The fact that new technologies introduce new challenges is not a novel idea, but what is important is the pace of development of new educational technologies, and the need for lecturers to keep abreast of this pace in order to ensure that teaching and learning are relevant to the needs of students. Spector (2001, p. 8) notes that the “big lesson about technology and learning from the 20th century is that less is known about how people learn than many educational researchers are inclined to admit”.

Against this background, the research problem for this study is whether emotional intelligence has a role to play in coping with the mastering of new educational technologies. The rationale, therefore, is that, by empowering lecturers with optimal skills with which to cope and master new educational technologies, the fulfilment of promises and benefits of blended learning may be realised.

1.5 Purpose and significance of the study

This study will focus on the role played by emotional intelligence in coping with the mastering of new educational technologies as encountered in the Partners@Work programme.

The conceptual model of emotional intelligence that was developed by Salovey and Mayer (1990); the process model of emotional intelligence and coping (Ashkanasy, 1997; Ashkanasy, 2002; Ashkanasy, Ashton-James, & Jordan, 2004; Ashkanasy & Dasborough, 2003); stress, appraisal and coping (Folkman & Moskowitz, 2004; Lazarus, 1991; Lazarus, 1999; Lazarus & Folkman, 1984); positive emotions and coping (Folkman, 1997; Folkman, 1999; Folkman & Greer, 2000; Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986; Folkman & Moskowitz, 2000a; Folkman & Moskowitz, 2000b); and the broaden-and-build theory (Fredrickson, 2005; Fredrickson & Joiner, 2002; Fredrickson & Levenson, 1998; Fredrickson *et al.*, 2000; Fredrickson & Tugade, 2003), will serve as a conceptual framework for this study.

The purpose of the study is to explore and describe the links between emotional intelligence and the ability to cope with mastering new educational technologies. The main research question for the study is:

- What are the linkages between emotional intelligence and coping strategies when mastering new educational technologies?

The following three sub-questions were formulated:

- What strategies do participants with diverse emotional intelligence profiles implement in order to master new educational technologies?
- What were the cognitive thought processes and emotions experienced by the participants while using diverse coping strategies?
- What are the trends regarding linkages between emotional intelligence and the coping strategies used by participants?

It is presumed that this study may contribute towards a deeper understanding of emotional intelligence as a moderator of work stress (Ashkanasy *et al.*, 2004) and of the stress encountered in mastering new educational technologies with subsequent

coping strategies. With its contribution to this emergent body of knowledge, the significance of the study lay in the clarification of the role of emotional intelligence in mastering and coping with new educational technologies. The results of this study might make possible the provision of guidelines to facilitators to optimise training in blended learning courses.

1.6 Research design and methodology

This study comprises a mixed methods approach within a case study design. The unit of analysis in the case study consists of the 2004 participants in the Partners@Work programme at the Department of Telematic Education at the Tshwane University of Technology, as I wanted to explore the linkages between coping strategies and emotional intelligence in a blended learning environment. The unit of analysis provided rich and detailed data for this study.

A mixed method approach, that is, the use of both qualitative and quantitative data, assisted in crystallising the data in order to provide a deeper understanding of how participants coped with the mastering of new educational technologies (Richardson, 2000, p. 934).

I adopted an interpretivist approach for studying the experiences, emotions and coping strategies of the participants, and a constructivist grounded theory approach for analysing and interpreting the data.

Owing to the volume and richness of the collected data, Atlas.ti™², a qualitative data analysis software package, was used in the preparation of the data for analysis. Using the analytical tools in the package, I endeavoured to enhance the validity of the study with detailed descriptions and examples of the procedures and outcomes during coding and data analysis

1.7 Limitations of the study

The study focused on a small group of participants in a single case, therefore the findings can not be generalised. I made an effort to describe the experiences, cognitive thought processes, emotions and coping strategies of the participants in a rich,

² I trained in the use of Atlas.ti™ with Woolf Consulting, Carpinteria, California, U.S.A.

descriptive and detailed way, giving readers sufficient information to judge the applicability of findings to their own settings.

Analysis of the data started after the conclusion of the 2004 Partners@Work programme and I was advised not to use interviews with participants, as too much time had elapsed. I therefore focused on the documents created during the programme, forming a rich set of data. During the programme, a focus group was held, but as the participants requested anonymity, I could not use this data for my study.

Another limitation of the research is that it is biased towards the verbal and narrative accounts, as less verbal participants did not blog as much as the more verbal participants. Absence of observation notes also limits the study.

1.8 Self-efficacy: A construct emanating from research findings

During analysis of the data, the importance of the role of self-efficacy as a construct, emerged. The following section proposes to give an overview of this construct in relation to the research findings.

In the introduction his edited book, *Self-efficacy: Thought control of action*, Schwarzer (1992, p. ix) proclaims: “Human functioning is facilitated by a personal sense of control. If people believe that they can take action to solve a problem instrumentally, they become more inclined to do so and feel more committed to this decision.”

Bandura’s (1992; Bandura, 1997) Social Cognitive Theory (SCT) offers an extensive framework for understanding human functioning and motivation in different contexts. Within SCT, self-efficacy is a key construct, as Bandura posits that “self-beliefs of efficacy influence how people feel, think and act” (Bandura, 1992, p. 3). What is important for self-efficacy as a construct is that it is considered to be highly specific (Schwarzer, 1992, p. ix). An individual “can have more or less firm beliefs in different domains of functioning” (Schwarzer, 1992, p. ix). In the environment of mastering new educational technologies, an individual may feel highly efficacious in mastering a specific technology, yet have low self-efficacy in mastering another.

Bandura reports on studies involving variables in motivation (Bandura, 1992; , 1997), where self-efficacy correlated highly with past experiences and was found to be the best predictor of achievement. Bandura (1992) identifies four constructs within SCT as sources of self-efficacy beliefs:

- past mastery experiences;
- vicarious experiences;
- social persuasion;
- physiological and affective states.

Schwarzer (1992, p. ix), however, warns that self-efficacy “is not the same as positive illusions or unrealistic optimism”. As self-efficacy is based on experience, it does not lead to unreasonable risk taking, but to venturesome behaviour within the capabilities of an individual. According to Schwarzer (1992, p. x), “self-efficacy does not simply reflect the perception of accomplishments; instead, it is based on subjective inferences from different sources of information”.

Bandura (1992, p. 10) asserts that four key processes regulate human functioning:

- cognitive;
- motivational;
- affective;
- selection processes.

Cognitive processes

According to Bandura (1992), self-efficacy beliefs have an effect on thought patterns that can either improve or undermine performance. The cognitive processes can materialise in different forms, such as forethought. Bandura (1992, p. 10) explains that, as much of human behaviour is purposive, behaviour is regulated by forethought embodying “cognized goals”. The self-appraisal of an individual influences the individuals’ personal goal setting. Bandura (1992, p. 10) contends that the “stronger the perceived self-efficacy, the higher the goals people set for themselves and the firmer their commitment to them. Challenging goals raise the level of motivation and performance attainments”. Bandura reports that performance can be enhanced if individuals visualise themselves performing activities with skill. According to Bandura (1992, p. 10), “perceived self-efficacy and cognitive simulation affect each other bi-directionally”. Cognitive thought processes that perceive the self as effective strengthen self-efficacy beliefs, while negative thinking anticipating failure undermines performance (Bandura, 1992).

Motivational processes

“Self-beliefs of efficacy play a central role in the self-regulation of motivation” (Bandura, 1992, p. 24). Bandura reasons that most of an individual’s motivation is cognitively generated, where individuals motivate themselves and guide their actions by forethought. Forming beliefs in what they can do and achieve, individuals set goals for themselves, anticipating the positive outcomes of their actions and planning courses of action to realise goals (Bandura, 1992).

Affective processes

“The self-efficacy mechanism also plays a pivotal role in the self-regulation of affective states” (Bandura, 1992, p. 24). Bandura believes that in order to understand individuals’ appraisal of external threats and their affective reactions to these threats, it is important to analyse their judgments of their coping capabilities, which largely determine the subjective appraisal of the safety of situational events (1992, p. 24). Individuals who believe in their ability to be in control of a situation will not conjure up negative thoughts, and therefore not be perturbed by them. On the other hand, individuals who feel they are not in control of a potentially threatening situation will experience high levels of anxiety. Bandura (1992, p. 25) contends that these individuals tend to dwell on their coping deficiencies, viewing aspects of the context of the situation as fraught with danger, magnifying the severity of possible threats and worrying about things that hardly ever happen. By harbouring these ineffective negative thoughts these individuals cause distress for themselves, constraining optimal functioning (Bandura, 1992).

Bandura (1992, p. 26) reports that “the role of perceived self-efficacy and anxiety arousal in the causal structure of avoidant behaviour has been examined in a number of studies”. Results from these studies indicate “that people base their actions on self-beliefs of efficacy in situations they regard as risky” (Bandura, 1992, p. 26). According to Bandura, individuals will avoid potentially threatening and risky situations and activities not because of anxiety experienced, but because they believe they are unable to cope successfully. Avoidance is a self-protecting action taken in situations perceived to be risky (Bandura, 1992).

Selection processes

“People can exert some influence over their life paths by the environments they select and the environments they create” (Bandura, 1997, p. 11). on the decision to be either

being positive or negative, influences the environment an individual creates for themselves to function in.

1.9 Potential contribution of the study

Addressing the issue of the dismal impact of qualitative and quantitative research on teaching and learning in higher education, Reeves, Herrington and Oliver (2005, p. 108) recommend that instructional technology researchers employ design research in an effort to advance teaching and learning in higher education. Reeves *et al.* (2005, pp. 107-108) cite Van den Akker giving a concise description of design research:

More than most other research approaches, development [design] research aims at making both practical and scientific contributions. In the search for innovative 'solutions' for educational problems, interaction with practitioners is essential. The ultimate aim is not to test whether theory, when applied to practice, is a good predictor of events. The interrelation between theory and practice is more complex and dynamic: is it possible to create a practical and effective intervention for an existing problem or intended change in the real world? The innovative challenge is usually quite substantial, otherwise the research would not be initiated at all. Interaction with practitioners is needed to gradually clarify both the problem at stake and the characteristics of its potential solution. An iterative process of 'successive approximation' or 'evolutionary prototyping' of the 'ideal' intervention is desirable. Direct application of theory is not sufficient to solve those complicated problems.

Collating the work of several authors (Bannan-Ritland, 2003; Design-Based Research Collective, 2003; Kelly, 2003) Reeves *et al.* proclaim several characteristics as distinctive of design research, of which the following characteristic relates to this study: "A commitment to theory construction and explanation while solving real-world problems" (2005, p. 103).

Reeves *et al.* (2005, p. 107) assert that "theory informing practice" is at the heart of design research. According to these authors, design research originated from the desire of educators to improve learning "from an informed theoretical perspective" (Reeves *et al.*, 2005, p. 107). Therefore, "design research is grounded in the practical reality of the instructor, from the identification of significant educational problems to the iterative nature of the proposed solutions" (Reeves *et al.*, 2005, p. 107).

Edelson (2002, p. 107) argues that design research provides opportunities to learn unique lessons, and therefore has an important role to play in influencing educational

practice. In the course of the design process, designers need to make decisions about design procedures, problem analyses and design solutions. Instructional designers “learn about teaching, learning and the educational context” in making these decisions (Edelson, 2002, p. 112). Design offers the opportunity to develop useful theories. Edelson (2002, p. 113) names three types of theory:

- domain theories;
- design frameworks;
- design methodologies.

A domain theory constitutes the generalisation of some part of the problem analysis (Edelson, 2002). For example, a domain theory could theorise about the learning process in relation to the learners and how they learn. It is therefore a theory about the world and not about design, and it is descriptive by nature (Edelson, 2002, p. 113). Edelson (2002, p. 114) defines a design framework as a “generalised design solution”. Design frameworks are prescriptive, describing the characteristics that the designed object needs to have in order to attain specific goals in a specific context. A design framework is thus a set of design guidelines pertaining to a design challenge in a specific context. Edelson (2002, p. 114) cites Van den Akker in describing design frameworks as *substantive design principles* and being distinctive characteristics of design research.

Design methodologies are described as general design procedures. Being prescriptive, design methodologies provide “guidelines for the process rather than the product” (Edelson, 2002, p. 115). Described as *procedural design principles* by Van den Akker, design methodologies describe “a process for achieving a class of designs, the forms of expertise required, and the roles to be played by the individuals representing those forms of expertise” (Edelson, 2002, p. 115).

From the results of this study, I identified factors which, if addressed in practice, could possibly empower lecturers in training programmes with optimal skills to cope with and master new educational technologies. Combining the literature review and the results of this study, the proposed interventions can thus be described in terms of a design framework as defined by Edelson (2002, p. 114), providing a “generalised design solution”. Figure 1.1 presents a graphical view of where the proposed interventions fit into the stress, appraisal and coping process pertaining to the mastering of new educational technologies.

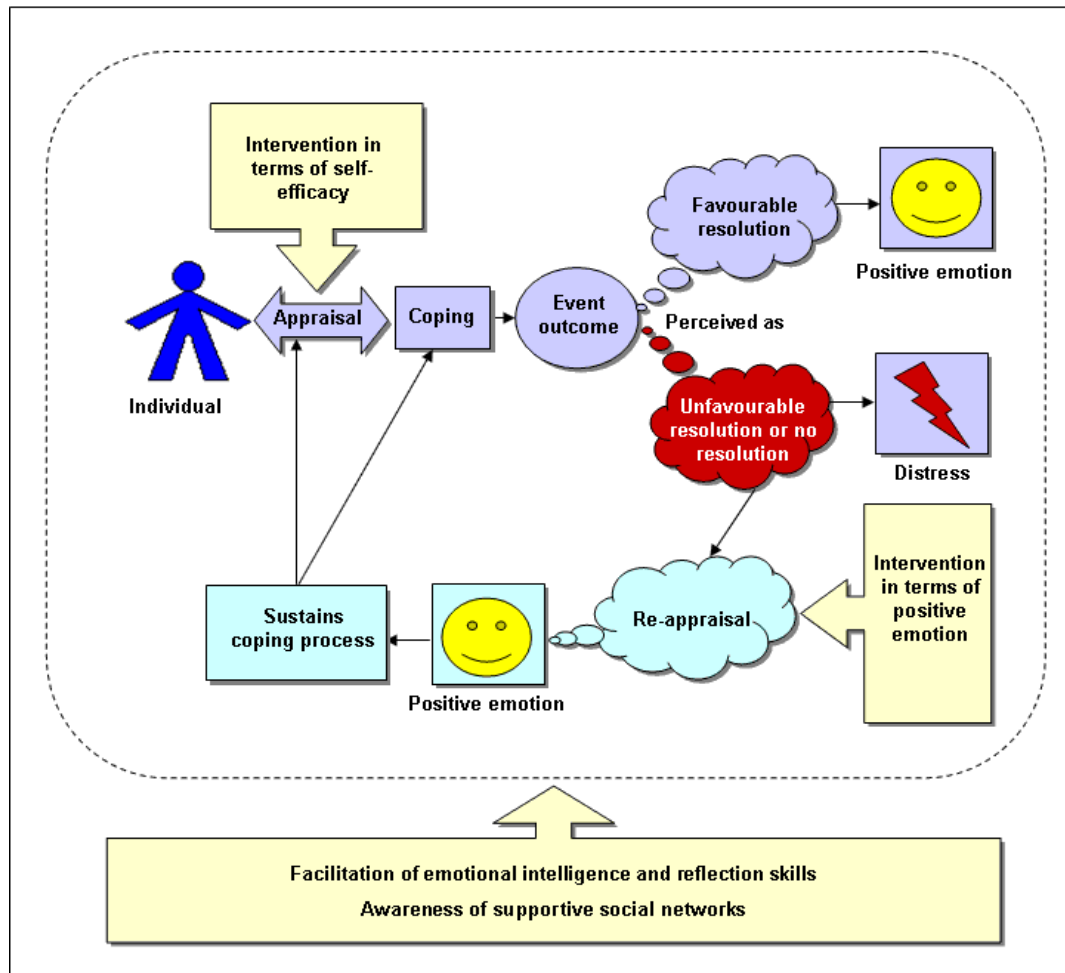


Figure 1.1 Interventions with introduction of new educational technologies

In terms of the research findings, I propose that the following interventions be included in the design of programmes introducing new educational technologies to lecturers:

- Introducing new educational technologies in such a way that resilient self-efficacy may develop by guiding and assisting in the mastering of the technologies. Persuading participants in training programmes that they can succeed, with interventions by the programme facilitator, giving manageable chunks of work and guiding them step-by-step in the mastering process.
- In accordance with Fredrickson (2005, p. 120), the cultivation of positive emotions could bring into being optimal functioning in coping with the mastering of new educational technologies. The importance of positive emotions should not be underestimated, as this is emphasised in the work of various researchers (Bandura, 1992; Carr, 2004; Carver, 1998; Carver &

Scheier, 2005; Folkman & Moskowitz, 2000a; Fredrickson, 2005; Fredrickson *et al.*, 2000).

- Empowering participants in training programmes with the facilitation of reflecting skills. This may stimulate cognitive activities such as questioning, self-awareness, problem stating, problem solving, emoting and ideation, enabling them “to become more independent in their approach to learning with, and about, computers in the future” (Phelps, Ellis, & Hase, 2001, p. 481)
- Awareness of supportive social networks. In a programme facilitating the mastering of new educational technologies, participants must be made aware of the significance of social support networks as a resource during the coping process.
- The introduction of a programme to develop emotional intelligence. Several authors have commented on the importance of emotional intelligence, not only in the transformation of effectiveness in work situations, but also in personal development (Caruso, 2006; Caruso & Salovey, 2004; Sparrow & Knight, 2006; Zeidner *et al.*, 2006). In their book, *The emotionally intelligent manager: How to develop and use the four key emotional skills of leadership*, Caruso and Salovey (2004) give guidance on assessing, learning and applying emotional intelligence skills. This may serve as a starting point in the development of emotional intelligence skills in training programmes.

This chapter concludes with an outline of the study and a description of the way in which the study was organised.

1.10 Outline and organisation of study

Table 1.1 presents an outline and organisation of the study.

Table 1.1 Outline and organisation of study

Chapter	Content	Outcome
1	Orientation <ul style="list-style-type: none"> • Problem statement and rationale • Purpose and significance • Context of study • Research design and methodology • Terms and definitions 	Provide background and rationale as an introduction to the study.
2	Literature analysis <ul style="list-style-type: none"> • Emotional intelligence • Stress, appraisal and coping • Positive emotions, resilience and coping • Broaden-and-build theory • Process model of affective response • Assumptions 	Conceptual framework to guide the study
3	Methodology <ul style="list-style-type: none"> • Role of the researcher • Research process • Ethics 	Providing a roadmap for conducting the study
4	Interpretation of results <ul style="list-style-type: none"> • Coping strategies • Cognitive thought processes and emotive feelings of participants 	Answer to sub-questions 1 and 2
5	Links between EI and coping <ul style="list-style-type: none"> • Main trends • Comparison of demonstrated and predicted EI skills of participants • Findings of the study 	Answer to sub-question 3 and main research question
6	Conclusion and recommendations <ul style="list-style-type: none"> • Revisiting assumptions and research questions • Theorising the research findings • Recommendations • Reflection 	Concluding study findings

Chapter 2: Review of Literature

*“Would you tell me, please, which way I ought to go from here?”
“That depends a good deal on where you want to get to,” said the Cat.
“I don’t much care where” said Alice.
“Then it doesn’t matter which way you go,” said the Cat.
(Dodgson, 1865)*

2.1 Introduction

Emotional intelligence has emerged in the last decade as an area of interest and is considered as an important variable in the context of coping in stressful situations (Ashkanasy, Ashton-James, & Jordan, 2004, p. 16; Folkman & Moskowitz, 2004; Fredrickson & Tugade, 2003). These authors argue that the construct of emotional intelligence, as defined by Mayer and Salovey (1997; Salovey & Mayer, 1990), could contribute towards explaining the differences manifested in coping behaviours within stressful situations. A study of the relevant literature reveals the concept of emotional intelligence as a construct that could possibly explain the reasons why certain people are able to cope easily with stressful situations, while others struggle to cope. In the field of educational technologies people aim at coping with mastering new educational technologies on a daily basis. In their book, *The emotionally intelligent manager*, Caruso and Salovey (2004) demonstrate that emotion is a prerequisite for making the correct decisions, initiating steps to solving problems, coping with change and succeeding. They argue that “emotions provide data that assist us in making rational decisions and behaving in adaptive ways” (Caruso & Salovey, 2004, p. 211). Salovey and colleagues are of the opinion that, as emotional intelligence influences the responses to emotional arousal (Salovey, Bedell, Detweiler, & Mayer, 1999), it therefore plays a significant role in the coping process.

In the conceptualisation of this study I have drawn from five different constructs in the literature, namely:

- Emotional intelligence, as defined by Mayer and Salovey, contains four interlinked branches depicting the abilities to perceive, facilitate, understand and manage emotions.

- The broaden-and-build theory of positive emotions, as described by Fredrickson, in terms of which positive emotions are linked to positive coping strategies and coping successfully in stressful situations.
- Resilience, which is a concept linking emotional intelligence with positive coping strategies. Resilience postulates an explanation for the difference in coping strategies used by individuals in similar situations.
- The theoretical model of appraisal and coping, which originated from the work of Lazarus and Folkman and was revised by Folkman, postulates the processes of appraisal, reappraisal and coping strategies utilised by an individual in order to cope with a stressful event.
- The process model of affective response, in terms of which Ashkanasy and colleagues propose the role of emotional intelligence as a moderator for coping with stress.

The conceptual framework for this study draws together all these concepts, forming an interlinking structure that will guide the exploration of the linkages between emotional intelligence and the coping strategies utilised when mastering new educational technologies. Figure 2.1 illustrates the interlinking of the different constructs to form the conceptual framework for this study.

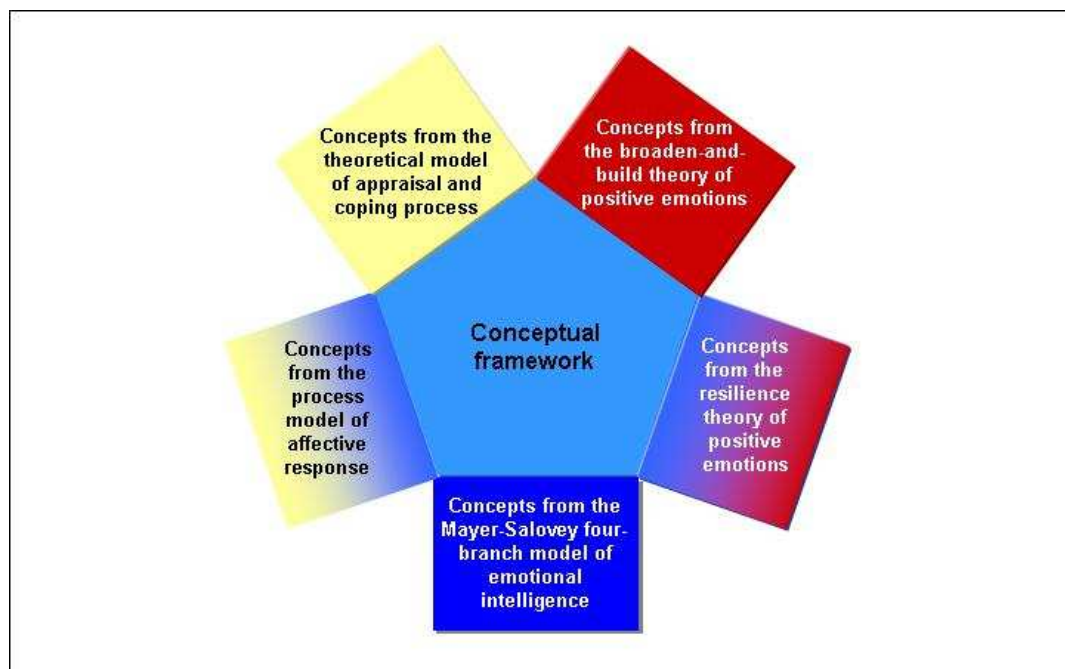


Figure 2.1 Conceptual framework

The colours used in figure 2.1 distinguish between the different concepts, showing overlap of certain constructs. Blue was used for emotional intelligence, red for the broaden-and-build theory and yellow for the concepts from the theoretical model of the appraisal and coping process. Concepts from the process model of affective response are indicated by yellow and blue, depicting the inter-relationship of emotional intelligence and the appraisal and coping process. Concepts from the resilience theory of positive emotions are indicated by blue and red, depicting the inter-relationship of emotional intelligence and positive emotions.

The conceptual framework will serve as a guide in the following areas of exploration:

- The strategies implemented/employed by participants with diverse emotional intelligence profiles in order to master new educational technologies.
- The cognitive thought processes and emotions experienced by participants while using diverse coping strategies.
- The trends regarding emotional intelligence and coping strategies used by participants with diverse emotional intelligence profiles.

These areas of exploration will assist in answering the main research question:

What are the linkages between emotional intelligence and coping strategies when mastering new educational technologies?

This chapter comprises an exploration of the constructs of emotional intelligence, stress, appraisal, coping and resilience, and the linkages between coping strategies and emotional intelligence. It contains a study of the research executed in the field and demonstrates where this study fits in terms of significance.

2.2 The emergence of emotional intelligence

In this section emotional intelligence is discussed in terms of its relevance to stress, appraisal, coping and resilience. The section will commence with an exposition of the background to the current models of emotional intelligence, which will be followed by an exploration of the ability model of EI in terms of the different branches, as defined by Mayer and Salovey (1997), synthesising the different concepts in terms of this study.

The section will conclude with an examination of the development of emotional intelligence.

With the publication of their articles Salovey and Mayer (Mayer, DiPaolo, & Salovey, 1990; Salovey & Mayer, 1990) formulated the term “emotional intelligence” and devised the new scientific idea behind emotional intelligence (EI) that human beings process emotional information in social contexts. In their first article the authors propose that human beings comprehend and use emotional information cognitively. They define emotional intelligence as “the ability to monitor one’s own and other’s feelings and emotions, to discriminate among them and to use this information to guide one’s thinking and actions” (Salovey & Mayer, 1990, p. 189).

Emotional intelligence is described by Mayer and Caruso (2002) as part of an emerging group of cognitive abilities in conjunction with social, practical and personal intelligences. Mayer and colleagues (Mayer & Caruso, 2002; Mayer & Salovey, 1995; Mayer & Salovey, 1997; Mayer, Salovey, & Caruso, 2004a; Mayer, Salovey, & Caruso, 2004b) describe emotional intelligence as consisting of two components: emotion and intelligence. They explain that the terms have specific scientific meanings which indicate ways in which the two terms may be used in conjunction (Mayer & Caruso, 2002). According to these authors “emotions” refer to the feelings a person experiences in a relationship, for example feeling happy or positive in a good relationship or feeling threatened or afraid in a bad relationship (Mayer & Caruso, 2002). “Intelligence” refers to the ability to reason with or about something, while comparing and contrasting different ideas (Mayer & Caruso, 2002). The authors (2004b, p. 198) admit that their notions about EI were influenced by the work of Gardner (1983), Sternberg (1985) and Wechsler (1950) which called for the broadening of the study of intelligence by directing attention to multiple intelligences.

The publication of books by Daniel Goleman (1995) and related work by other scientists (Bar-On & Parker, 2000; Schutte, Malouff, Hall, Haggerty, Copper, Golden, & Dornheim, 1998) resulted in the successful popularisation of the construct of emotional intelligence and this, in turn, led to heated debates about the construct (Mayer & Caruso, 2002). Caruso (2004, p. 1) refers to emotional intelligence as a *conceptual inkblot* – a term which refers to the vast number of interpretations associated with emotional intelligence. Bryan (2006) also notes that emotional intelligence may be defined in a multitude of ways.

2.2.1 Current models of emotional intelligence

In an attempt to clarify the different approaches, Mayer, Salovey and Caruso (2000c) propose two different models of emotional intelligence: an ability model and a mixed model. The models best known in the literature are the ability model of Mayer and Salovey (1997) and the two mixed models of Bar-On (2006) and Goleman (1995). The mixed models are based primarily on Goleman's popularisation of the concept of emotional intelligence as defined by Salovey and Mayer (1990) and resulted in a broad spectrum of approaches (Caruso, Mayer, & Salovey, 2002; Mayer *et al.*, 2004b). These approaches range from the ability approach of Salovey and Mayer (1990) to the lists of competencies advocated by Goleman (1998) and the psychological well-being approach of Bar-On (2006).

Mixed models combine various aspects of personality resulting in a collection of traits, dispositions, skills, competencies and abilities which are labelled emotional intelligence, even though the model predominately involves neither emotion nor intelligence (Bar-On, 2006; Bar-On & Parker, 2000; Goleman, 1995; Mayer *et al.*, 2004b; Schutte *et al.*, 1998). The importance of general intelligence and cognitive ability is de-emphasised in the mixed model (Brackett, Mayer, & Warner, 2004; Cobb & Mayer, 2000).

The ability model of emotional intelligence (Mayer & Salovey, 1997; Salovey & Mayer, 1990) focuses on emotional skills that comprise four abilities: perceiving, facilitating, understanding, and managing or regulating emotions. This model provides a framework for research on social and emotional adaptation (Mayer & Salovey, 1997). The authors posit that, by focusing on the interplay between emotion and intelligence where thought and emotion interact in meaningful and adaptive ways, emotional intelligence is placed within the sphere of an intelligence (Mayer *et al.*, 2000c, p. 400). Table 2.1 summarises the definitions, major areas of skills, and specific examples of the three different models.

Table 2.1 Three different models, all labelled “emotional intelligence”

	Mayer & Salovey (1997)	Bar-On (1997)	Goleman (1995)
Model type	Ability	Mixed	Mixed
Overall definition(s)	“Emotional intelligence is the set of abilities that account for how people’s emotional perception and understanding vary in their accuracy. More formally, we define emotional intelligence as the ability to perceive and express emotion, assimilate emotion in thought, understand and reason with emotion, and regulate emotion in the self and others” (after Mayer & Salovey, 1997).	“Emotional intelligence is ... an array of non cognitive capabilities, competencies, and skills that influence one’s ability to succeed in coping with environmental demands and pressures” (Bar-On, 1997, p. 14).	“The abilities called here <i>emotional intelligence</i> , which include self-control, zeal and persistence, and the ability to motivate oneself” (Goleman, 1995, p. xii. [and] “There is an old-fashioned word for the body of skills that emotional intelligence represents: <i>character</i> ” (Goleman, 1995, p. 28).
Major areas of skills and specific examples	<p>Perception and expression of emotion</p> <ul style="list-style-type: none"> Identifying and expressing emotions in one’s physical states, feelings and thoughts. Identifying and expressing emotions in other people, artwork, language, etc. <p>Assimilating emotion in thought</p> <ul style="list-style-type: none"> Emotions prioritise thinking in productive ways. Emotions generated as aids to judgement and memory. <p>Understanding and analysing emotion</p> <ul style="list-style-type: none"> Ability to label emotions, including complex emotions and simultaneous feelings. Ability to understand relationships associated with shifts of emotion. <p>Reflective regulation of emotion</p> <ul style="list-style-type: none"> Ability to stay open to feelings. Ability to monitor and regulate emotions reflectively to promote emotional and intellectual growth (after Mayer & Salovey, 1997, p. 11). 	<p>Intrapersonal skills</p> <ul style="list-style-type: none"> Emotional self-awareness Assertiveness Self-regard Self-actualisation Independence <p>Interpersonal skills</p> <ul style="list-style-type: none"> Interpersonal relationships Social responsibility Empathy <p>Adaptability scales</p> <ul style="list-style-type: none"> Problem solving Reality testing Flexibility <p>General mood</p> <ul style="list-style-type: none"> Happiness Optimism 	<p>Knowing one’s emotions</p> <ul style="list-style-type: none"> Recognising a feeling as it happens Monitoring feelings from moment to moment <p>Managing emotions</p> <ul style="list-style-type: none"> Handling feelings so they are appropriate Ability to soothe oneself Ability to shake off rampant anxiety, gloom or irritability <p>Motivating oneself</p> <ul style="list-style-type: none"> Marshalling emotions in the service of a goal Delaying gratification and stifling impulsiveness Being able to get into the “flow” state <p>Recognising emotions in others</p> <ul style="list-style-type: none"> Empathic awareness Attunement to what others need or want <p>Handling relationships</p> <ul style="list-style-type: none"> Skill in managing emotions in others Interacting smoothly with others
Measures	Mayer-Salovey-Emotional – Intelligence-Test (MSCEIT) Ability test Criterion-report test	Bar-On EQ-I (Mayer, 2006, p. 10) Self-report scale	Emotional Competency Inventory (ECI) (Mayer, 2006, p. 11) Self-report scale

Source: Adapted from Mayer *et al.*, 2000c.

An important difference between the ability and the mixed models is the way in which emotional intelligence is measured (Mayer & Caruso, 2002). Rather than using broad self-report measures the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT™) is an ability test, testing the ability of the individual to solve emotional problems (Mayer, Salovey, Caruso, & Sitarenios, 2003). For a more detailed account of the MSCEIT™ see § 3.5.2.1.

2.3 The ability model of emotional intelligence

For the purpose of exploring linkages between emotional intelligence and the coping strategies employed in mastering new technologies, the ability model is preferred, with the justification of it being the only model that is skill based and does not rely on self-report (Mayer *et al.*, 2000c; Mayer, Salovey, Caruso, & Sitarenios, 2001b; Mayer *et al.*, 2003). Caruso, Mayer and Salovey (2002, p. 61) state “the model does not focus on personality traits or dispositions per se, except as a product of having these underlying skills”. The ability model has an inherent link to coping strategies because it focuses on the ways in which emotions may facilitate thinking and adaptive aptitude (Mayer *et al.*, 2001b; Mayer *et al.*, 2003). In terms of emotional intelligence being consistent with Sternberg’s (1997) definition of an intelligence, Mayer and colleagues argue that “symposia on intelligence over the years repeatedly conclude that **the first hallmark of intelligence is high-level mental ability such as abstract reasoning**” (2000c, p. 399). Results of studies by Salovey, Mayer and colleagues (Mayer, Caruso & Salovey, 2002; Mayer, Salovey, Caruso & Sitarenios, 2001) provide evidence that emotional intelligence meets the criteria of a standard intelligence.

The ability model of emotional intelligence was conceptualised by Mayer and Salovey in 1990 and later refined (1997) as a four-branch model that involves the skill of recognising emotional information and using this information in abstract reasoning. Mayer and Salovey (1997, p. 10) define emotional intelligence as the “abilities to perceive, appraise, and express emotion; to access and/or generate feelings when they facilitate thought; to understand emotion and emotional knowledge; and to regulate emotions to promote emotional and intellectual growth”. In this study, the Mayer and Salovey definition of emotional intelligence is applicable.

Figure 2.2a illustrates the four-branch model of emotional intelligence as conceptualised by Salovey and Mayer*.

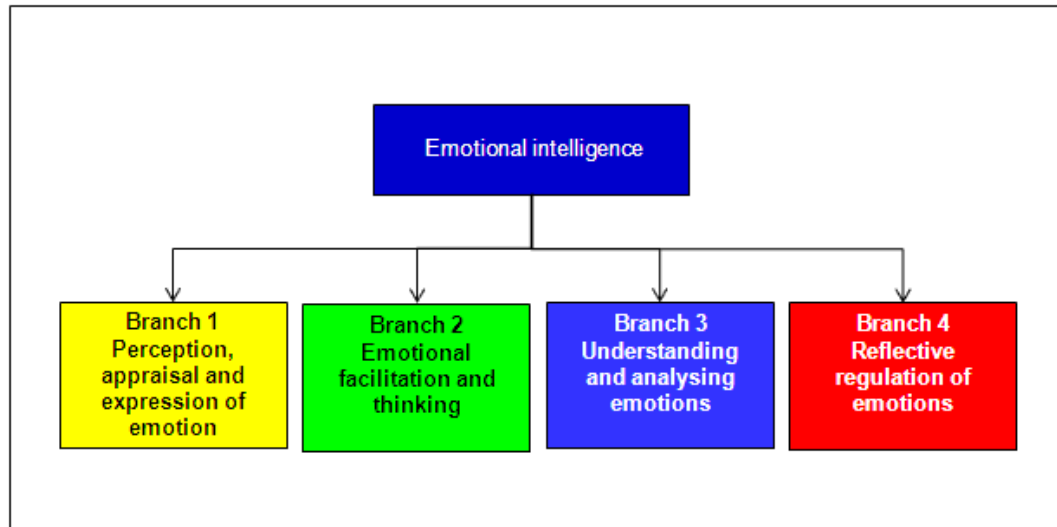


Figure 2.2a The Mayer-Salovey four-branch model of emotional intelligence

Source: Mayer and Salovey (1997, p.11).

The definition formulates four different categories of abilities or skills, which Mayer and Salovey refer to as *branches* of emotional intelligence. In figure 2.2b the concept of puzzle pieces is used to illustrate the four-branch model as interrelated and interlinked pieces depicting the interrelated and interlinked nature of skills involved in emotional intelligence (Mayer & Salovey, 1997).

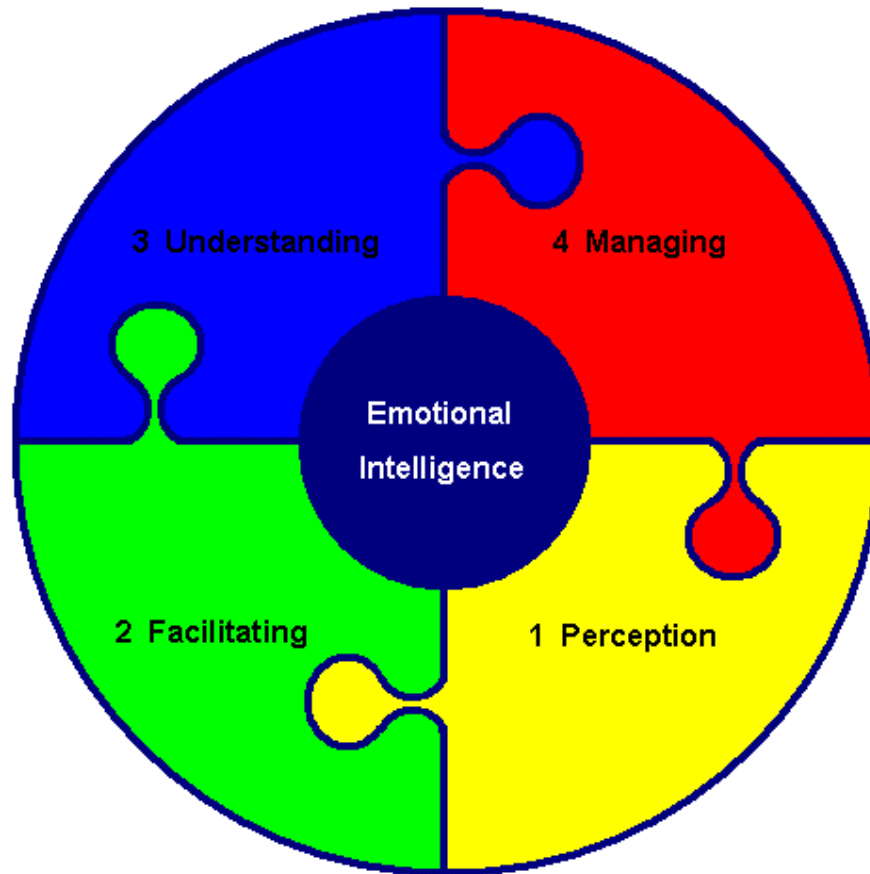


Figure 2.2b The Mayer-Salovey four-branch model of emotional intelligence: Researcher's conceptualisation

Mayer and Salovey (1997) arrange the branches of their model from 1-4, starting from the more basic psychological processes in branch 1 to the higher, more psychologically integrated processes of branch 4. According to the authors the lowest level, the first branch, concerns the relatively uncomplicated abilities of perceiving and expressing emotion (Mayer & Salovey, 1997), while the highest and fourth branch concerns the conscious, reflective management of emotion. The authors (1997) ordered each branch in such a way that those abilities emerging relatively early in the development of emotional intelligence are placed to the left in the first box (figure 2.2), while abilities to the right are later-developed abilities, usually emerging in adult, integrated personalities. In other words, within a branch the skills are presented as a developmental progression from the more basic skills to the more sophisticated, integrated skills (Mayer *et al.*, 2004b, p. 199). Figure 2.3 illustrates the interrelated and interconnected ordering of emerging abilities within a particular branch of emotional intelligence.

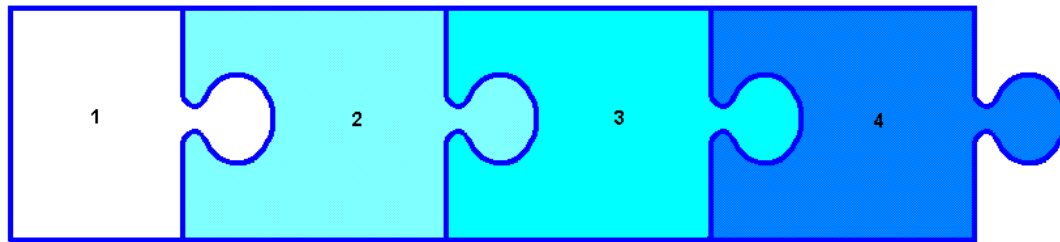


Figure 2.3 Abilities emerging in the development of emotional intelligence

According to Mayer and Salovey (1997) more highly emotionally intelligent people will develop the abilities designated by boxes 1–4 faster and show a greater mastery of the specific abilities than those people with a lower emotional intelligence.

2.3.1 Perceiving emotion

The first branch of the ability model is termed “Perceiving emotion” (Mayer & Salovey, 1997). Figure 2.4 gives an overview of abilities within this branch

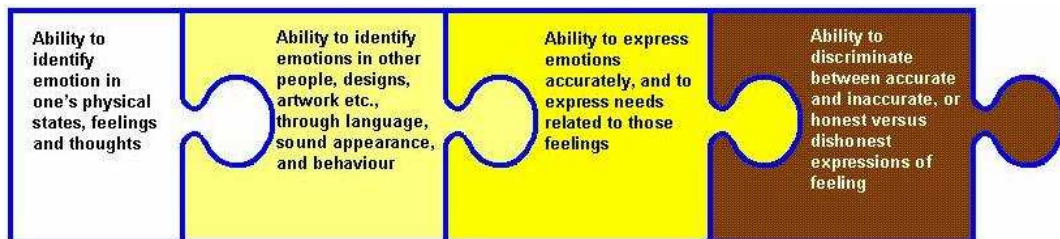


Figure 2.4 Perception, appraisal and expression of emotion

Source: Adapted from Mayer and Salovey (1997).

“Perceiving emotion” includes a number of skills, such as the ability to identify feelings, express emotions accurately, and differentiate between real and false emotional expressions (Mayer & Salovey, 1997). Emotional perception involves paying attention to, and accurately decoding, emotional signals in facial expressions, tone of voice, and artistic expressions (Mayer, Salovey, & Caruso, 2002). Mayer, Salovey, and Caruso (2002) cite evidence that suggests that the accurate appraisal of others is related to accurate perception in oneself. Lopes, Côté and Salovey (2006, p. 57) conclude that the ability to express emotion will contribute towards effective communication whereas the ability to decode emotional information will enable an individual to appraise important situations.

2.3.1.1 Synthesis

Within the context of the coping strategies utilised when mastering new educational technologies, it is my presumption that emotional intelligence will constitute the ability to identify emotions and feelings correctly when exposed to new educational technologies. Emotionally intelligent individuals will be able to express their needs in terms of mastering the technology. Conversely, individuals with a score considered as developing in terms of “Perceiving emotion” will not be able to identify emotions and feelings correctly when exposed to new educational technologies. In addition, these individuals will not be able to express their needs in terms of mastering a particular technology.

2.3.2 Facilitating² thought

The second branch of the ability model comprises “Facilitating thought” or “Using emotions” (Mayer & Salovey, 1997) or in some sources “Assimilating thought” (Mayer *et al.*, 2000c). Figure 2.5 provides an outline of the abilities within this branch of emotional intelligence.³

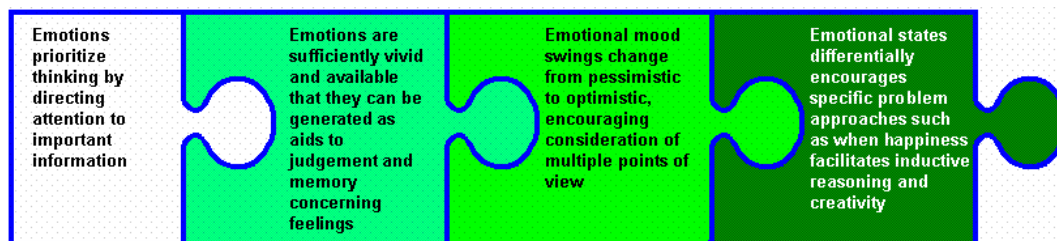


Figure 2.5 Emotional facilitation of thinking

Source: Adapted from Mayer and Salovey (1997)

“Facilitating thought” is the ability to employ feelings in order to enhance thinking and, as such, this ability may be harnessed for more effective problem-solving, reasoning, decision-making and creative endeavours (Mayer *et al.*, 2002). In a commentary on an article by Mayer, Salovey and Caruso (2004), Oatley (2004, p. 216) concluded that, taking into account research on the ways in which moods affect thinking, the question may be posed as to how skilled individuals are in knowing how to use their moods to

² Some authors use the term assimilation and others facilitation. I used assimilation in the original context of the specific author.

³ The colour corresponds with the colour of the facilitation branch in figure 2.2, with the intensity of the colour increasing to depict the developmental progression from the more basic skills to the more sophisticated integrated skills within the facilitation branch.

enhance their thinking effectively. According to Mayer *et al.* (2001a, p. 7) mood swings and changes in viewpoints may have the positive result of viewing matters from different perspectives, thereby fostering creative thinking. As this ability entails the ability to relate mental images and emotions, and knowledge of the effect of emotions on cognitive processes, for example, deductive reasoning, creativity, problem-solving and communication, Lopes *et al.* (2006, p. 57) reason that this ability may contribute towards enhanced decision-making abilities.

2.3.2.1 Synthesis

In terms of coping strategies when mastering educational technologies, it is my assumption that the more emotionally intelligent individual will have the ability to use mood swings to find creative solutions for problems encountered by considering different points of view. For instance, by using emotions to motivate a specific strategy an individual will effectively be using his emotions to facilitate thinking and doing. An emotionally intelligent individual will understand the consequences of emotion and have the ability to use emotion to direct thinking and decision-making. As an example, in situations in which the emotionally intelligent individual may experience anger as a result of software or hardware not functioning properly, the emotionally intelligent individual will refrain from making hasty decisions, as he will be aware that anger may influence decision-making. Conversely, the less emotionally intelligent individual will lack the ability to use mood swings to find creative solutions for problems encountered, and will not be capable of considering different points of view. It is assumed that a less emotionally intelligent individual will not be able to use emotions effectively in the facilitation of thinking and doing. Abilities such as understanding the consequences of emotion and using emotions to direct thinking and in decision-making processes will be deficient. In contrast to the more emotionally intelligent individual the less emotionally intelligent individual will not refrain from making hasty decisions while angry. In general, the quality of decision-making may be deficient.

2.3.3 Understanding emotions

The third branch of the ability model of emotional intelligence comprises “Understanding emotions” (Mayer & Salovey, 1997). Figure 2.6 illustrates the progression of abilities within this branch of emotional intelligence.⁴

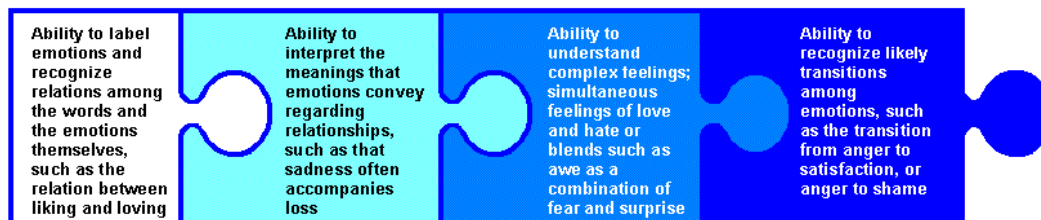


Figure 2.6 Understanding and analysing emotions

Source: Adapted from Mayer and Salovey (1997)

“Understanding emotions” refers to the ability to understand complex emotions and emotional “chains”, the transition of emotions from one stage to another, the ability to recognise the causes of emotions, and the ability to understand relationships between emotions (Mayer *et al.*, 2002). These authors believe the understanding of emotions is a critical component of emotional intelligence in the sense that knowledge of the ways in which emotions may combine and change over time will benefit individuals in their dealings with other people and in understanding themselves (Mayer *et al.*, 2001a, p. 7). For example, an awareness that annoyance and irritation will lead to rage if the cause of the irritation is not prevented from continuing and intensifying (Mayer *et al.*, 2001a, p. 7). Lopes *et al.* (2006, p. 57) note that understanding emotional processes involves an understanding of the type of events that are likely to elicit different emotions and this, in turn, may help individuals to judge how other people will act in response to different situations.

2.3.3.1 Synthesis

Understanding the nature of emotions and how these emotions will change over time, it is my assumption that the more emotionally intelligent individual will probably benefit from using coping strategies that will deal effectively with a perceived problem. For example, the more emotionally intelligent individual will understand that the level of

⁴ The colour corresponds with the colour of the understanding branch in figure 2.2, with the intensity of the colour increasing to depict the developmental progression from the more basic skills to the more sophisticated integrated skills within the understanding branch.

frustration experienced when encountering a problem with the mastering of a new technology will intensify if not addressed. In terms of the coping strategies utilised when mastering new educational technologies, it is supposed that the more emotionally intelligent individual will display signs of understanding the transition between emotions, and of concentrating and utilising the effect of positive emotions. In contrast with the more emotionally intelligent individual, it is my assumption that the less emotionally intelligent individual will not show much evidence of any ability to use emotions in coping strategies, thus dealing effectively with perceived problems. The less emotionally intelligent individual will probably not be capable of understanding and using the transition between emotions, in effect, the less emotionally intelligent individual will not be able to move from negative to positive emotions, and will therefore be unable to cope effectively with a perceived problem.

2.3.4 Managing emotions

The fourth branch of the ability model comprises “Managing emotions” (Mayer & Salovey, 1997). Figure 2.7 illustrates the skills within the fourth branch of emotional intelligence.⁵

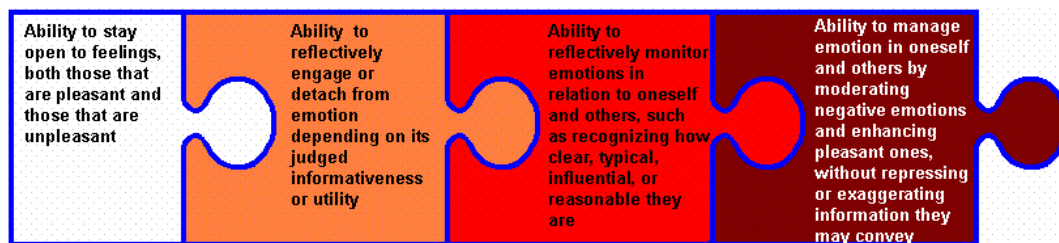


Figure 2.7 Regulation of emotions to promote emotional and intellectual growth

Source: Adapted from Mayer and Salovey (1997)

“Managing emotions” includes the ability to stay aware of one’s emotions, even those that are unpleasant, the ability to determine whether an emotion is clear or typical, and the ability to solve and moderate emotion-laden problems without necessarily suppressing negative emotions (Caruso *et al.*, 2002). This involves understanding the implications of social acts in terms of emotions and the regulation of emotion in oneself and others (Mayer *et al.*, 2000c). When problem-solving, emotionally intelligent people

⁵ The colour corresponds with the colour of the managing branch in figure 2.2, with the intensity of the colour increasing to depict the developmental progression from the more basic skills to the more sophisticated integrated skills within the managing branch.

use the emotions arising from the situation in order to diagnose and solve the underlying problem so as to achieve their goals (Lopes *et al.*, 2006; Mayer & Salovey, 1993).

This branch also refers to the ability to connect or disconnect from an emotion depending whether the emotion is useful in a given situation (Mayer & Salovey, 1997). Mayer, Salovey and Caruso (2001a, p. 7) maintain that, to be emotionally intelligent, it is important for an individual to be aware of and to accept the emotions generated by the situation and to use those emotions in problem-solving. According to these authors, the successful management of emotions entails the ability to include emotion in thought, without either minimising or exaggerating the emotion. Lopes, Côté and Salovey (2006, p. 57) note that modulating an experience with the aim of achieving one's goals may entail reframing a negative experience so that it appears more bearable, for example, using humour to keep up the spirits of a team.

2.3.4.1 Synthesis

In terms of managing emotions, it is my assumption that the more emotionally intelligent individual will, while coping with new educational technologies, be able to integrate logic and emotion into the decision-making process. For this study it is important to be aware that the more emotionally intelligent individual will probably show evidence of an awareness of the emotions created by a situation and will use these emotions creatively in solving the problem at hand.

My assumption is that the more emotionally intelligent individual will be most likely to use humour and positive emotions as coping strategies. In terms of coping strategies, it is assumed that the emotionally intelligent individual will possess the ability to re-evaluate and reframe a difficult situation in order to facilitate viewing the situation in a more positive way. On the other hand it is assumed that the less emotionally intelligent individual will show no evidence of any ability to integrate logic and emotion into the decision-making process. The assumption is that the less emotionally intelligent individual will not have the ability to use positive emotions and humour when coping with new educational technologies. In the case of the less emotionally intelligent individual, it is my assumption that there will be no evidence of any ability to reframe and re-evaluate a difficult situation with the purpose of viewing the situation in a positive light.

2.3.5 Developing emotional intelligence

Several authors have reported on the viability of training to develop emotional intelligence (Caruso & Salovey, 2004; Lopes *et al.*, 2006; Sparrow & Knight, 2006; Tugade & Fredrickson, 2001; Zeidner, Roberts, & Matthews, 2002). In terms of the importance of developing emotional intelligence in this study, it is presumed that, if there are linkages between emotional intelligence and coping strategies, then facilitators should take cognisance of the possibility of developing emotional intelligence. Lopes, Côté and Salovey (2006) state that the set of interrelated abilities that comprise emotional intelligence develop through experience and learning, and that it is possible to train these abilities. Tugade and Fredrickson (2001) agree with this notion and quote data that suggests that emotional skills might be taught. Lopes, Côté and Salovey (2006) argue that interventions in terms of which individuals are taught to learn from their everyday experiences may raise their awareness of the importance of emotional skills and may enhance their understanding of people's motives and behaviour.

Tugade and Fredrickson (2001) suggest that interventions in terms of which individuals are taught to utilise positive emotions effectively may optimise personal and social functioning. Training programmes can be beneficial if people learn to interact effectively with other people and an organisation could reap the benefits (Lopes *et al.*, 2006). These authors state that they are not aware of any training programmes based on the ability model of Mayer and Salovey (1997) that have been rigorously evaluated. In their article (2006), Lopes, Côté and Salovey propose ideas and suggestions for the training of emotional skills. In their book *The emotionally intelligent manager*, Caruso and Salovey (2004) explain the importance of the four branches and the interrelated skills of emotional intelligence, and provide concrete techniques for the use and improvement of these skills.

2.3.5.1 Perceiving and communicating emotion

According to Lopes, Côté and Salovey (2006) training people to read facial expressions such as anger, fear and happiness that are associated with emotion may help them in real life. Training in nonverbal communication may raise awareness and motivate people to pay more attention to emotions, thus enabling them to identify subtle expressions of emotion (Lopes *et al.*, 2006).

2.3.5.2 Using emotion to facilitate thinking

Thoughts are influenced by emotions in many different ways; Lopes, Côté and Salovey (2006) maintain that the degree of risk a person is prepared to take when making a decision is influenced by the emotions experienced at that particular time. According to these authors, both anger and happiness increase risk-taking, but they add that an emotionally intelligent individual will understand the consequences of these emotions and will refrain from making important decisions when angry. Of great importance for this study is the statement that the emotion of happiness stimulates creative thinking and enhances performance in problem-solving (Lopes *et al.*, 2006, p. 68).

2.3.5.3 Understanding emotion

An individual's understanding of emotion will be improved by discussions and concrete examples of the transition of one emotion to another and of the way emotions combine and progress (Lopes *et al.*, 2006, p. 69). A knowledge of the similarities and difference between emotions, the reasons for triggering certain emotions and different appraisals of situations may enhance the ability of a person to understand and predict both his own and other people's emotions (Lopes *et al.*, 2006, p. 69).

2.3.5.4 Managing emotions

Lopes *et al.* (2006, p. 69) suggest helping individuals to extend their repertoire of coping strategies as a way to develop emotional management skills. The reasoning in terms of the topic of coping strategies in relation to the ability to manage emotions effectively is of great importance in this study. These authors also suggest that a discussion on coping strategies may be initiated and that this discussion involve problem-focused ways of coping as it is always better to address a problem directly and seek a solution than to endure with frustration. Emotion-focused coping strategies may be used to deal with temporary feelings of anxiety and frustration in cases where it is not possible to solve problems immediately. Reframing and re-evaluating the situation will engage individuals in viewing the situation in a more positive light. In accordance with the work of Fredrickson *et al.* (2000), Lopes *et al.* (2006, p. 70) advise reframing a difficult situation as an opportunity for learning or finding meaning and insight in hardship. Another emotion-focused strategy involves seeking assistance and support. The authors warn that some coping strategies may be maladaptive, for example, avoiding or denying problems (Lopes *et al.*, 2006).

Lopes *et al.* (2006, p. 73) conclude that emotional intelligence is a set of interrelated abilities that develop over time through learning and experience. In their opinion these abilities are enhanced by training. The development of the emotional skills of staff members will benefit an organisation over time, as people who gain emotional skills interact more effectively and cope better with work stress than those without emotional skills. Coping habits are usually deeply entrenched which means that emotional training will not result in rapid changes, nevertheless training will increase awareness of the importance of emotional skills and serve as motivation to learn from everyday experiences (Lopes *et al.*, 2006).

2.3.5.5 Synthesis

Facilitators of programmes introducing new technologies should take cognisance of the possibility of developing emotional intelligence through training programmes. As coping habits are usually deeply entrenched training will not yield rapid change. However, what is significant is that the facilitation of emotional intelligence skills in training programmes may raise an awareness of the importance of emotional skills and this may serve as motivation to learn from everyday experiences.

2.4 Positive emotions and emotional intelligence

This section comprises an overview of positive emotions and their link with emotional intelligence. The section will start with an outline of the broaden-and-build theory according to Fredrickson (2005), and will be followed by a discussion on increasing the prevalence of positive emotions and the “intelligent” use of emotions and resilience. The section will conclude with a synthesis relating positive emotions and resilience in the study.

According to the ability model of emotional intelligence, emotionally intelligent people are capable of understanding their own emotions – both positive and negative – are proficient in processing emotional information, and have the ability to use these emotions in solving problems (Mayer & Salovey, 1993; Mayer & Salovey, 1995; Mayer & Salovey, 1997). Traditional research on emotion theory focused on the management of negative emotions (Folkman & Moskowitz, 2000b; Fredrickson, 2005; Tugade & Fredrickson, 2001) and did not take into account the effect of positive emotions. Fredrickson identified this gap in traditional approaches and developed the broaden-

and-build theory in an attempt to illuminate the adaptive benefits of positive emotions (Fredrickson, 2005; Fredrickson & Joiner, 2002; Fredrickson & Levenson, 1998; Fredrickson *et al.*, 2000).

2.4.1 The broaden-and-build theory

Fredrickson's broaden-and-build theory (Fredrickson, 2005; Fredrickson & Joiner, 2002; Fredrickson & Levenson, 1998; Fredrickson *et al.*, 2000; Fredrickson & Tugade, 2003) corroborates with research already carried out (Isen, Rosenzweig, & Young, 1991) and posits that, under stressful conditions, positive emotions broaden the thought-action repertoire (Fredrickson & Levenson, 1998; Fredrickson *et al.*, 2000). Fredrickson argues that "positive emotions also *produce* optimal functioning, not just within the present ... but over the long term as well" (2005, p. 120). In contrast, negative emotions narrow the scopes of attention and cognition. Research carried out by Folkman and colleagues on positive emotions and coping (Folkman, 1997; Folkman & Greer, 2000; Folkman & Moskowitz, 2000b) complements the broaden-and-build theory.

Fredrickson *et al.* argue that the broadened mindsets created by positive emotions carry adaptive benefits in the sense that new lines of thought and action are encouraged (Fredrickson, 2005; Fredrickson & Levenson, 1998; Fredrickson *et al.*, 2000). Through the experience of positive emotions individuals may transform themselves, and become more creative, knowledgeable and resilient (Tugade & Fredrickson, 2001). As a consequence, an incidental effect of the experience of positive emotions is the increase of personal resources, which may be tapped into when needed in stressful situations (Fredrickson, 2005; Fredrickson *et al.*, 2000; Fredrickson & Tugade, 2003; Tugade & Fredrickson, 2001). Fredrickson (2005) maintains that, through the effects of broadening thought processes, positive emotions increase the probability of feeling good in the future. She illustrates this upward spiral effect with a feedback loop as depicted in Figure 2.8.

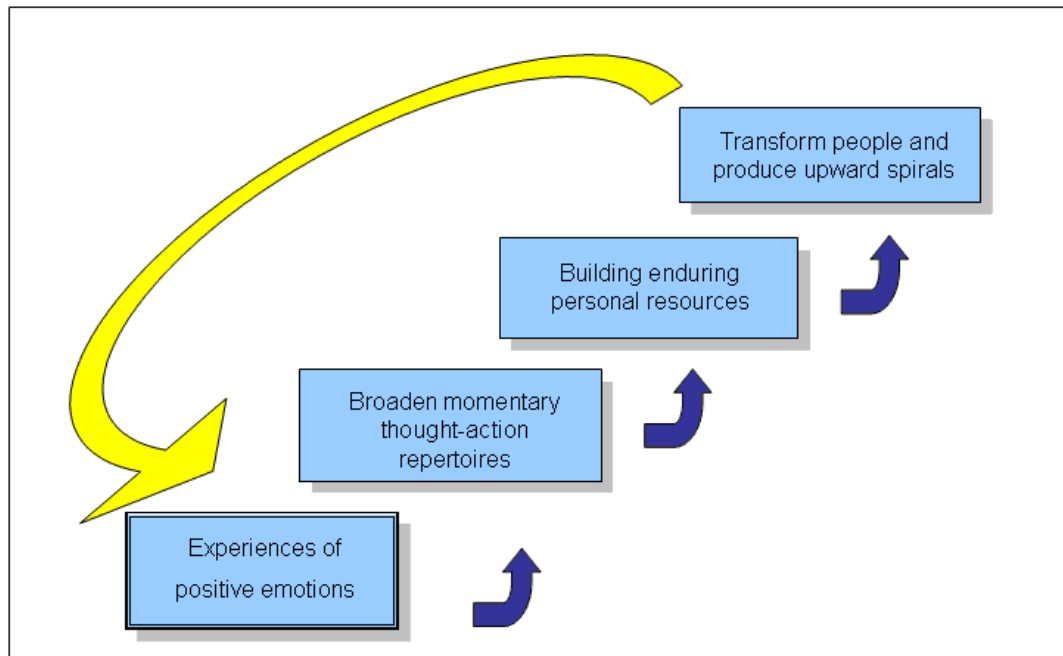


Figure 2.8 The broaden-and build theory of positive emotions

Source: Adapted from (Fredrickson, 2005, p. 124)

2.4.2 Increasing the prevalence of positive emotions

Fredrickson states that no intervention programmes based on the broaden-and-build theory of positive emotions have yet been developed and tested (2005, p. 128). She suggests relaxation and pleasant activities as intervention strategies to increase the prevalence of positive emotions (Fredrickson, 2005). “We should cultivate positive emotions in our own lives and in the lives of those around us not just because doing so makes us feel good in the moment but also because doing so will transform us to better people, with better lives in the future” (Fredrickson, 2005, p. 131).

2.4.3 Synthesis

Using positive emotions it is my assumption that participants will show evidence of adapting to the stressful situation while coping with the mastering of new technologies. Evidence of using positive emotions relates to thinking creatively, showing knowledge and resilience and tapping into personal resources.

2.4.4 “Intelligent” use of positive emotions

In accordance with the ability model of emotional intelligence (Mayer & Salovey, 1993; Mayer *et al.*, 2001a; Mayer *et al.*, 2002) a determining factor in managing emotions intelligently is the ability to draw on feelings in order to understand and guide behaviour. Based on research findings, Aspinwall (2001) states that optimists and people experiencing positive affect tend to expect positive outcomes in stressful situations and will use active coping strategies to attain these outcomes. Tugade and Fredrickson (Tugade & Fredrickson, 2004) point out that a key factor that distinguishes those individuals who cope successfully in stressful situations from those who fail to cope may be emotional intelligence.

Using the findings from various studies carried out (Folkman, 1997; Folkman & Greer, 2000; Folkman & Moskowitz, 2000b; Fredrickson & Joiner, 2002; Fredrickson *et al.*, 2000) Tugade and Fredrickson argue that it is possible that certain individuals have the ability to understand intuitively and to use positive emotions to their advantage in stressful situations (2004, p. 10). These individuals are psychologically resilient and may be described as emotionally intelligent in terms of the ability model of emotional intelligence (Mayer & Salovey, 1997).

2.4.5 Resilience

According to Tugade and Fredrickson (2002, p. 10) psychological resilience entails the ability to bounce back from negative experiences and to be flexible in adapting to the demands of a stressful situation. People with low psychological resilience have difficulty coping with negative experiences and are incapable of recovering from them, while, on the other hand, people who manifest high psychological resilience are able to deal with anxiety and tolerate frustration (Tugade & Fredrickson, 2004). In stressful situations resilient people tend to be creative in their problem-solving and demonstrate greater personal insight into their own capabilities during stressful experiences (Tugade & Fredrickson, 2001) than those who are less resilient. What is important, according to Tugade and Fredrickson, is that highly resilient individuals are able to recognise their own feelings and emotions as well as those of other people, and are able to use this emotional knowledge in the effective management of emotional experiences in stressful situations (2002, p. 11). In other words, resilient individuals reflect emotional intelligence (Tugade & Fredrickson, 2004).

In corroboration of the above, Tugade and Fredrickson (2004, p. 320) report on research findings which indicate that resilient people have an optimistic, enthusiastic and energetic approach to life. Highly resilient people are inquisitive and open to new experiences. High positive emotionality features strongly (Tugade & Fredrickson, 2002, p. 11)

An explanation for effective emotion regulation on the part of resilient people could lie in their understanding of the benefits of using positive emotions (Tugade & Fredrickson, 2002). The authors claim that this argument is supported by the way in which resilient people use positive emotions as coping strategies in stressful situations. Resilient people are happy and energetic, and they often use humour as a coping strategy (Tugade & Fredrickson, 2002). This indicates conclusively the advantage of positive emotions in the coping process, as this will create broadened mindsets that may be valuable in other coping efforts (Tugade & Fredrickson, 2002; Tugade & Fredrickson, 2004).

2.4.6 Synthesis

It is my assumption that participants who show high resilience by being optimistic, enthusiastic and energetic, and who use humour as a coping strategy, will also be emotionally intelligent and will show evidence of their abilities to use and manage emotions. Alternatively, participants manifesting low resilience will have difficulty in coping with stressful situations and will reveal anxiety, thus substantiating the assumption that these participants have yet to develop their emotional abilities.

2.5 Stress, appraisal and coping

This section will examine the processes of stress, appraisal and coping as relevant to the theme of coping with new educational technologies. The section will begin with a discussion on the background to the theoretical model of the coping process. This will be followed by an examination of the stress, appraisal and coping processes. The section will conclude with a summary and synthesis of the coping cycle in the context of the study.

Emotions constitute an integral part of the coping process. The questions that arise in connecting emotional intelligence and managing stress and coping (Ashkanasy *et al.*,

2004; Chapman & Clarke, 2003; Folkman & Moskowitz, 2004; Slaski, 2002; Slaski & Cartwright, 2002; Slaski & Cartwright, 2003) are important in the context of this study .

A significant portion of the research on present-day stress and coping originated with the publication in 1966 of Richard Lazarus's work *Psychological stress and the coping process* (Folkman & Moskowitz, 2004). His theory of stress and coping is cognitively orientated and emphasises the role of cognitive appraisal in the determination of the quality of a person's emotional response to a stressor and the way in which the person copes with the appraised situation (Folkman & Moskowitz, 2004). The process of coping starts in response to a negative appraisal of potential harm to goals important to the individual (Folkman & Moskowitz, 2004). The often intense emotional responses are characteristic of these appraisals, and Folkman and Moskowitz posit that one of the primary coping tasks is often the down-regulation of negative emotions as these emotions may interfere with coping (2004). The Lazarus and Folkman theoretical model of the coping process is illustrated in figure 2.9.

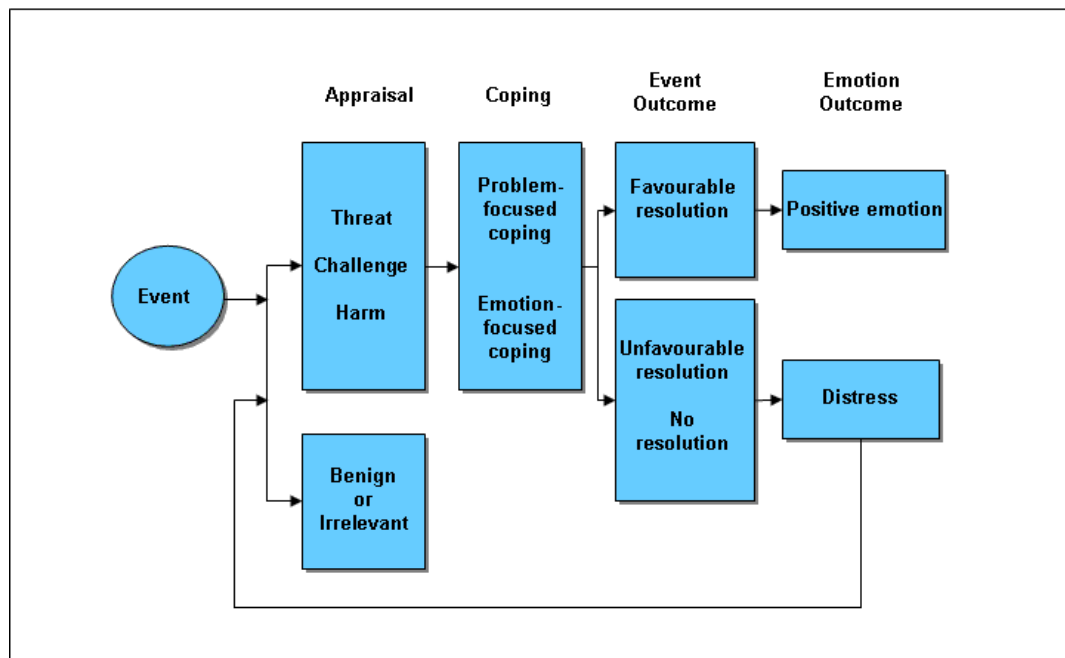


Figure 2.9 Lazarus and Folkman model of the coping process

Source: Adapted from Folkman (1997, p. 1217)

Appraisal and coping are the two processes at the heart of this theoretical model of stress and coping, and serve as vital mediators in stressful encounters between an individual and his environment and the long-term outcomes of these encounters

(Folkman & Greer, 2000; Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986). Individuals are continuously appraising their relationship with their environment (Folkman, 1997; Lazarus, 1999; Lazarus & Folkman, 1984). The stress process will begin if the environmental demands are perceived to exceed the individual's personal resources (Folkman, 1997; Lazarus & Folkman, 1984). Figure 2.10 illustrates the stress process during which an individual appraises an event, either with a perception of having adequate resources, which will lead to a positive outcome, or inadequate resources with the negative outcome of experiencing stress.⁶

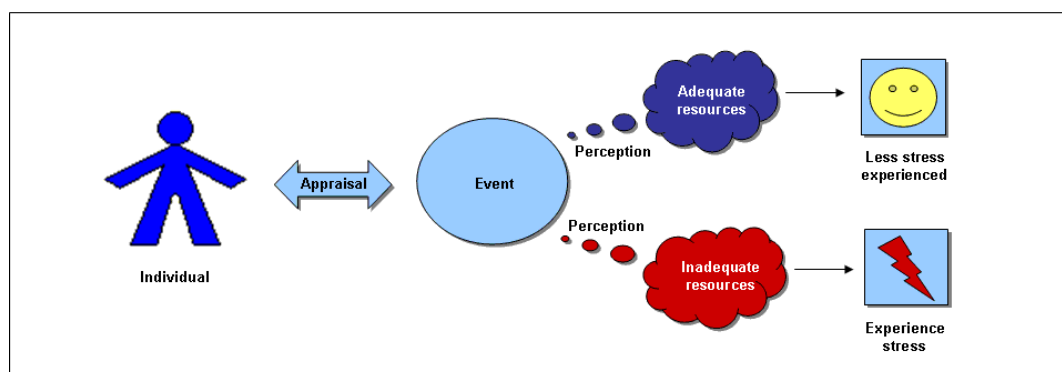


Figure 2.10 The stress process

Ashkanasy *et al.* (2004, p. 5) suggest that stress is not a one-dimensional variable, but a construct consisting of various variables and processes. According to them stress is a response process functioning to alert the individual to the need to adapt to environmental demands in order to preserve well-being.

2.5.1 Stress

Stress is an inevitable aspect of life (Lazarus & Folkman, 1984, p. 21).

The reason for the difference in the ways in which human beings function in response to stressful situations lies in the way in which people cope with stress (Lazarus, 1999). Stress may be described as a response process alerting a person to the need for adaptation in the interests of the well-being of the person (Ashkanasy *et al.*, 2004). Physiological, cognitive, behavioural, and emotional changes in order to adapt to situational demands are characteristic of stress (Lazarus, 1999). The judgement of whether or not a situation is stressful depends on the cognitive process of appraisal (Folkman, 1997; Lazarus & Folkman, 1984, p. 21).

⁶ The use of colour differentiates between the type of stress and the emotion experienced.

2.5.2 Appraisal

Appraisal concerns the evaluation on the part of an individual in terms of the personal significance of a given event and the resources of the individual to cope effectively with that event (Folkman & Greer, 2000; Folkman *et al.*, 1986). Personal differences in sensitivity and vulnerability mean that people differ in the ways in which they evaluate and react to a given event (Folkman & Greer, 2000; Lazarus & Folkman, 1984). Therefore, for the sake of survival and well-being, an individual must distinguish between situations that are either benign or dangerous (Lazarus & Folkman, 1984). These distinctions are often subtle, complex and abstract in nature, and, in order to be able to discriminate between benign and dangerous situations, the individual depends on cognitive processes in the brain. These cognitive processes are powered by what the individual has learned about the world through their experience of the world (Folkman & Greer, 2000; Lazarus & Folkman, 1984, p. 23).

Lazarus and Folkman (1984, p. 31) distinguish between primary appraisal and secondary appraisal. Primary appraisal involves determining the affective significance of the stressor in the sense of the way in which the well-being of the person is affected (Ashkanasy *et al.*, 2004; Folkman & Greer, 2000), while secondary appraisal determines the coping potential of the person. Figure 2.11 illustrates the appraisal process, — both primary and secondary appraisal.

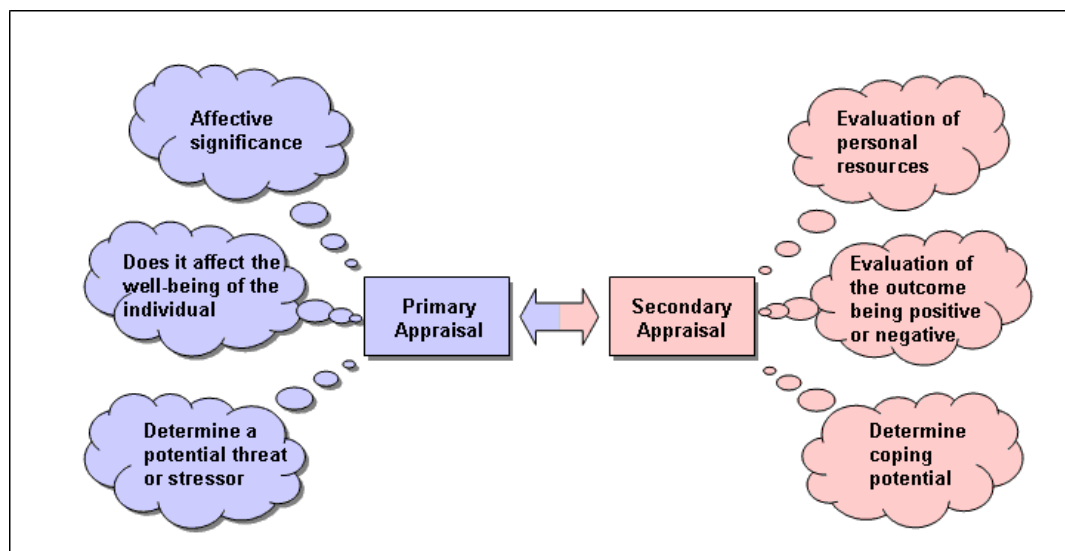


Figure 2.11 Primary and secondary appraisal

The possibility of the event constituting a potential stressor or threat is established by means of the primary appraisal, while the probability of either a positive or negative outcome is established by the secondary appraisal (Folkman & Greer, 2000; Lazarus & Folkman, 1984). Primary and secondary appraisals coalesce to establish whether the potential stressor contains the possibility of harm or loss, or whether it is challenging with the possibility of mastering and benefit (Folkman *et al.*, 1986).

2.5.3 Primary appraisal

The primary appraisal is influenced by factors such as the beliefs, values and commitments of the individual (Folkman & Greer, 2000). Lazarus and Folkman (1984) distinguish between three kinds of primary appraisal, namely irrelevant, benign-positive and stressful. An appraisal will be deemed irrelevant if the encounter with the environment does not hold any implications in terms of the well-being of the person (Lazarus & Folkman, 1984, p. 32). An appraisal will be judged benign-positive when the outcome of the encounter is interpreted as positive (Lazarus & Folkman, 1984, p. 32) and well-being will be either enhanced or preserved. Lazarus and Folkman (1984, p. 32) maintain that benign-positive appraisals are categorised by pleasant emotions such as joy, love, happiness, exhilaration or peacefulness. Lazarus and Folkman (1984) distinguish between three types of stressful appraisal, namely, harm or loss, threat and challenge.

Figure 2.12 illustrates the different categories of primary appraisal,⁷ while figure 2.13 illustrates the different types of stress appraisal.⁸

⁷ The use of colour differentiates the type of stress from the emotion experienced.

⁸ The use of colour depicts the intensity of emotion experienced, with lighter colours indicating less intense emotions and darker colour colours indicating emotions of greater intensity.

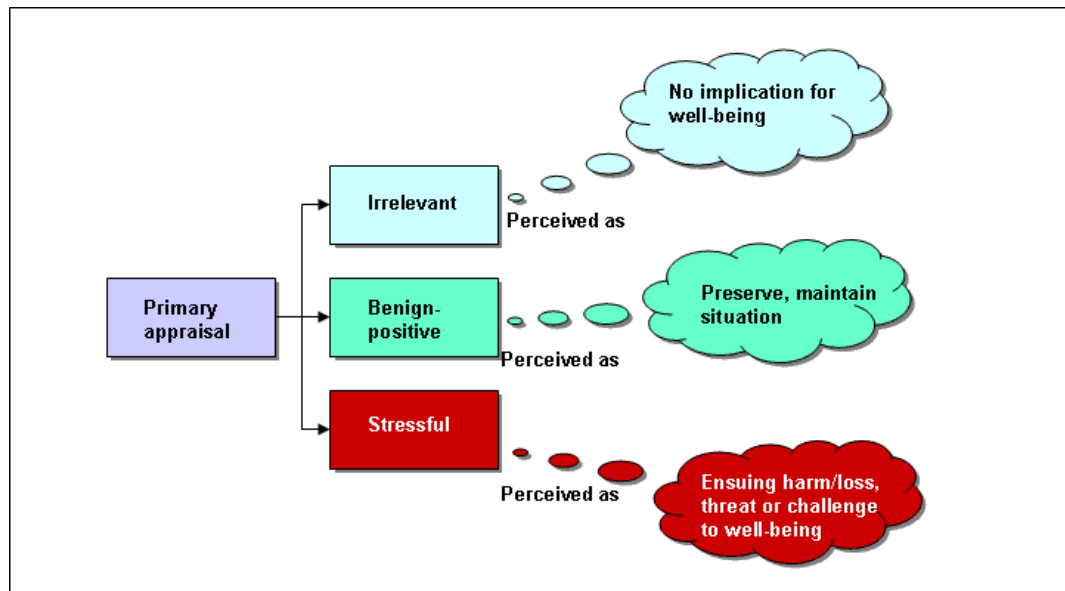


Figure 2.12 Different kinds of primary appraisal

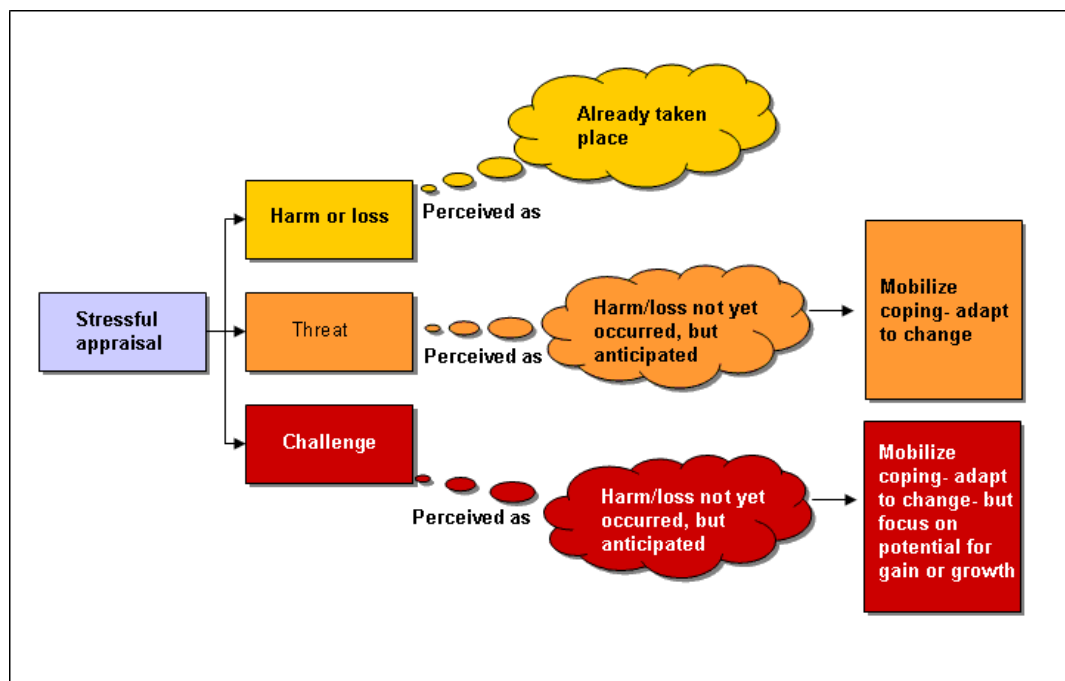


Figure 2.13 Stressful appraisal

Perceptions of harm or loss arise in situations in which damage has already occurred, while an appraisal of threat concerns harm or loss that has not yet occurred, but is anticipated (Lazarus & Folkman, 1984, p. 33). Perceptions of threat bring about anticipatory coping (Lazarus & Folkman, 1984, p. 33) which enables the person to adapt to the situation. Stress appraisals of challenge share common ground with threat

in the sense that they also mobilise the person to adaptive and coping functioning. Lazarus and Folkman (1984, p. 33) state that the main difference between a challenge and a threat lies in the fact that the focus of challenge is on potential gain and growth. Challenge appraisals are characterised by pleasant emotions such as eagerness, excitement and exhilaration, whereas threat centres on potential problems and is characterised by unconstructive emotions such as fear, anxiety and anger (Lazarus & Folkman, 1984, p. 33).

Lazarus and Folkman (1984, p. 53) argue that threat and challenge should not be seen as the poles of a single continuum, but should be considered as separate and related constructs that may occur simultaneously.

2.5.4 Secondary appraisal

Secondary appraisal is a decisive feature whenever an individual experiences a stressful encounter, in the sense that the outcome of the encounter depends on the response of the individual to what is at stake and what could be achieved (Lazarus & Folkman, 1984, p. 35). Lazarus and Folkman describe secondary appraisal as a “complex evaluative process that takes into account which coping option will accomplish what it is supposed to do, and the likelihood that one can apply a particular strategy or set of strategies effectively” (Lazarus & Folkman, 1984, p. 35). In the same vein Bandura (1997, p. 35) points out that, in reference to the belief of an individual in order to cope successfully, there is a distinction between what is expected to be the outcome and the efficacy expectation.

Ashkanasy *et al.* (2004, p. 10), in elaborating on the model of Lazarus and Folkman, explain that the role of appraisal in the stress response process is, firstly, to identify situational cues that are significant to the personal goals of the individual. The second role of appraisal is to evaluate the situation in terms of threat, challenge, harm, loss or benefit. Secondary appraisal includes the evaluation and balancing of situational realities with personal resources and coping capabilities. Ashkanasy *et al.* argue that the impact of emotional stress responses on cognitions and behaviours depends on the ability of the individual to use personal resources effectively to transform the emotional experience into adaptive behaviour by using appropriate coping strategies (Ashkanasy *et al.*, 2004).

2.5.5 Reappraisal

Another form of appraisal, namely reappraisal, differs from appraisal in the sense that it constitutes a follow-up of an earlier appraisal and takes place in situations in which, based on new information gained from the environment, a change is deemed necessary (Folkman *et al.*, 1986; Folkman & Moskowitz, 2000b). Reappraisals may be the result of cognitive coping efforts and it is often difficult to distinguish this kind of reappraisal from reappraisal which is based on new information (Lazarus & Folkman, 1984).

Important for this study is the fact that the cognitive appraisal processes, according to Lazarus and Folkman (1984, p. 54), “are not necessarily conscious, nor are the agendas that shape appraisal always easily accessible. Cognitive appraisal may also be shaped by agendas that are below the person’s awareness” (Lazarus & Folkman, 1984, p. 54). Positive reappraisal in the context of coping strategies will be discussed in § 2.4.1.1.

2.5.6 Synthesis

In an environment in which individuals need to master new educational technologies, it is my assumption that individuals will differ in the nature of their responses to a stressful event when mastering a new technology. Consequently, their emotional responses to the stressor will affect their abilities to cope with the mastering of new technologies.

2.5.7 Coping

Coping is not a stand-alone phenomenon. It is embedded in a complex, dynamic, stress process that involves the person, the environment, and the relationship between them (Folkman & Moskowitz, 2004, p. 748).

Lazarus and Folkman (1984, p. 141) define coping as “constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person”. Carver and Scheier (1999, p. 553) describe coping as consisting of “efforts at self-regulation in times of duress”, while Folkman and Moskowitz (2004, p. 745) define coping as “the thoughts and behaviors used to manage the internal and external demands of situations that are appraised as stressful”.

Two main forms of coping will be used when a situation is appraised as stressful, namely, emotion-focused and problem-focused coping (Folkman, 1997). Figure 2.14 illustrates the different types of coping strategy.

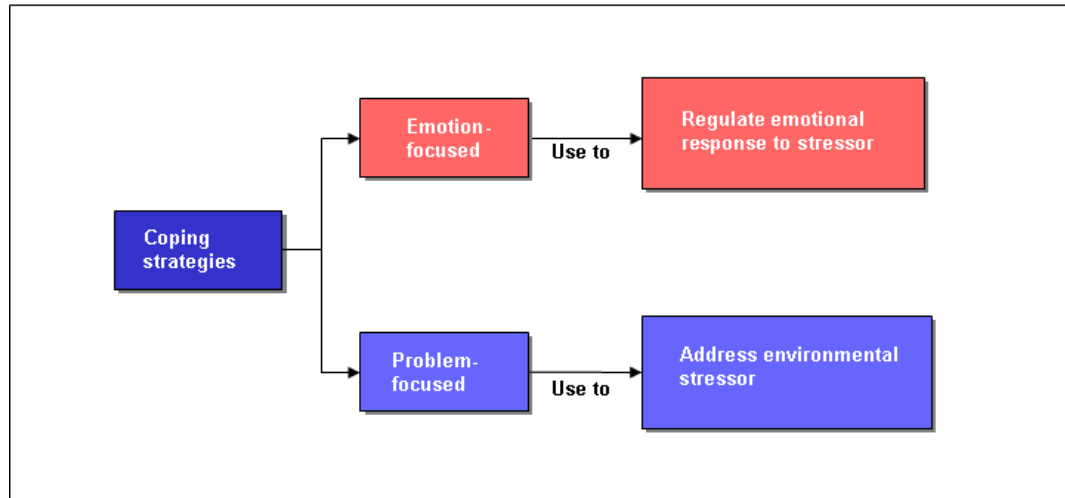


Figure 2.14 Coping strategies

Coping serves two intervening functions, firstly, in terms of problem-focused coping which addresses the environmental stressor and, secondly, in terms of emotion-focused coping which regulates the emotional response to the stressor (Folkman, 1997; Lazarus & Folkman, 1984).

2.5.7.1 Emotion-focused forms of coping

Lazarus and Folkman (1984, p. 150) categorise coping strategies such as avoidance, minimisation, distancing, selective attention, positive comparisons and wresting positive value from negative events as emotion-focused forms of coping. The primary objective of these forms of coping is the lessening of emotional distress (Folkman, 1997; Lazarus & Folkman, 1984). Higher levels of emotion-focused coping strategies, such as escape and avoidance, the seeking of social support, distancing, or cognitive reframing, are linked to less control (Folkman, 1997; Folkman & Greer, 2000; Lazarus & Folkman, 1984).

2.5.7.2 Problem-focused forms of coping

Problem-focused coping strategies are comparable to the strategies used for problem-solving, and Folkman and Lazarus (1984, p. 152) distinguish between problem-focused strategies directed at the environment and those directed at the self. Problem-focused strategies involve an analytic, objective process during which alternative solutions are evaluated (Lazarus & Folkman, 1984). According to Folkman and Greer (2000, p. 35) higher levels of problem-focused coping strategies, such as information search, problem-solving, and direct action to solve a problem, are linked to greater control and secondary appraisal.

2.5.7.3 Diverse coping strategies

There is increasing consensus in the literature on stress and coping that distinctions should be made between diverse coping strategies other than those that are problem-focused and emotion-focused (Carr, 2004; Folkman & Moskowitz, 2004; Zeidner & Endler, 1996). Folkman and Moskowitz (2004, p. 751) note that the challenge for coping researchers is “to find a common nomenclature for these diverse coping strategies so that findings across studies can be discussed meaningfully”. Although the theoretical distinction between problem-focused and emotion-focused coping strategies provides a broad way of dealing with coping strategies, there are other conceptualisations which need to be considered. Folkman and Moskowitz (2004) warn that, although coping nomenclature such as problem-focused and emotion-focused helps in the synthesis of findings across studies, important differences within categories may be masked. They discuss the example of distancing and escape-avoidance – in terms of distancing an individual recognises a problem, but deliberately puts it out of their mind, whereas escape-avoidance includes behaviours such as alcohol abuse (Folkman & Moskowitz, 2004). Both these coping strategies constitute forms of avoidant coping and are usually grouped under emotion-focused coping (Folkman & Moskowitz, 2004). An important distinction between the two forms of coping is that distancing may be adaptive when there is nothing to be done, for example, waiting for the results of a test, while escape-avoidance is maladaptive in the same kind of situation (Folkman & Moskowitz, 2004). It is important in terms of this study, in which the individual coping strategies of participants are investigated, that distinctions such as these be retained.

2.5.7.4 Functional and dysfunctional coping strategies

An important concept encountered in the literature is the distinction between functional and dysfunctional coping strategies. Carr (2004, p. 216) distinguishes between functional and dysfunctional coping strategies in terms of all three styles of coping strategies, namely problem-focused, emotion-focused and avoidance-focused. Table 2.2 lists these functional and dysfunctional strategies.

Table 2.2 Functional and dysfunctional coping strategies

Type	Aim	Functional	Dysfunctional
Problem-focused	Problem solving	<ul style="list-style-type: none"> • Accepting responsibility for solving the problem • Seeking accurate information • Seeking dependable advice and help • Developing a realistic action plan • Following through on the plan • Postponing competing activities • Maintaining an optimistic view of one's capacity to solve the problem 	<ul style="list-style-type: none"> • Taking little responsibility for solving the problem • Seeking inaccurate information • Seeking questionable advice • Developing unrealistic plans • Not following through on plans • Procrastination • Holding a pessimistic view of one's capacity to solve the problem
Emotion-focused	Mood regulation	<ul style="list-style-type: none"> • Making and maintaining socially supportive and emphatic relationships • Seeking meaningful spiritual support • Catharsis and emotional processing • Reframing and cognitive restructuring • Perceiving the stress in a humorous way • Relaxation routines • Physical exercise 	<ul style="list-style-type: none"> • Making and maintaining destructive relationships • Seeking meaningless spiritual support • Unproductive wishful thinking • Long-term denial • Taking the stress too seriously • Drug and alcohol abuse • Aggression
Avoidance-focused	Avoiding source of stress	<ul style="list-style-type: none"> • Temporarily mentally disengaging from the problem • Temporarily engaging in distracting activities • Temporarily engaging in distracting relationships 	<ul style="list-style-type: none"> • Mentally disengaging from the problem for the long term • Long-term engagement in distracting activities • Long-term engagement in distracting relationships

Source: Adopted from Carr (2004, p. 216)

2.5.7.5 Synthesis

In essence, by using functional problem-focused coping strategies, the individual takes responsibility for finding a solution to the problem. Optimism, creativity and wisdom are important characteristics of such an individual (Carr, 2004, p. 215). On the other hand, dysfunctional problem-focused coping strategies comprise not taking responsibility together with a pessimistic perception of the capacity to solve the problem (Carr, 2004).

Within the context of this study it is assumed that acquiring a new skill in the mastering of a new technology will involve a stressor. As individuals differ in the ways in which they cope with stressors it is assumed that different individuals will use different coping strategies to master a new technology.

The assumption is made that an individual will use functional emotion-focused strategies mainly to alleviate stress by seeking social support, constructive reframing, cognitive restructuring and humour (Carr, 2004). Contrary to this, it is assumed that individuals using dysfunctional emotion-focused coping strategies may gain short-term relief, but that stress will not be alleviated in the long term (Carr, 2004).

It is also assumed that well-judged functional avoidance-focused coping strategies may assist in temporarily disengaging psychologically from a stressful situation (Carr, 2004), but that avoidant coping strategies may develop into dysfunctional strategies when used in the long term in stress management (Carr, 2004).

2.5.8 Event outcome

The coping strategies used by individuals may differ from person to person, depending on a number of factors such as the intensity of the emotional response to the stressor, the ability of the individual to regulate and moderate the emotional response, and opportunities for solving the problem inherent in the situation (Folkman & Greer, 2000, p. 35).

Coping processes bring about an event outcome (Folkman, 1997). Figure 2.15 illustrates the event outcome following the coping process.

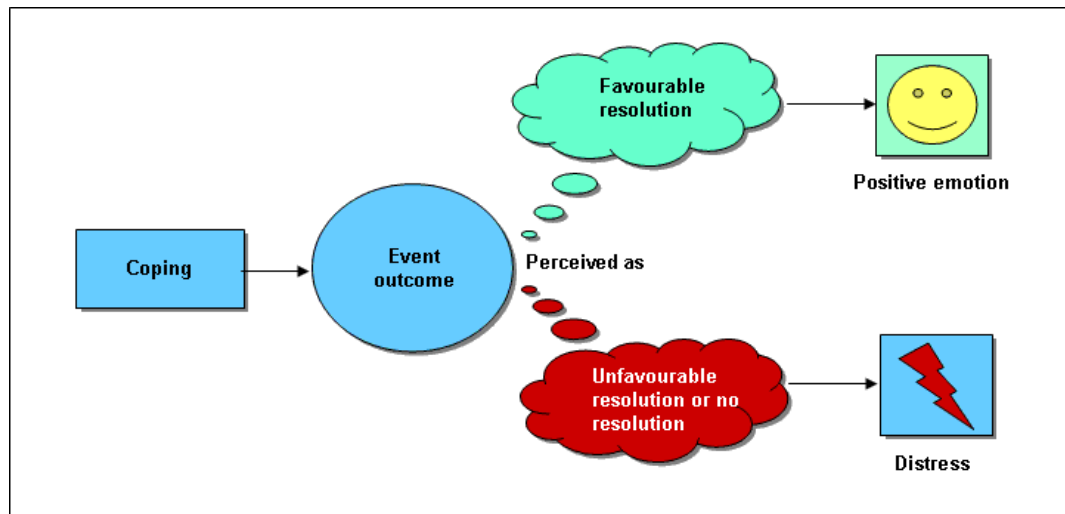


Figure 2.15 Event outcome

If the individual perceives the event outcome as a favourable resolution, it is likely that positive emotion will be generated (Folkman, 1997). On the other hand, if the event outcome is perceived either as not having been resolved or as an unfavourable resolution of the event, this may lead to distress with the possibility of the activation of additional coping processes (Folkman, 1997).

Figure 2.16 presents a graphical summary designed to represent the coping process according to Lazarus and Folkman.

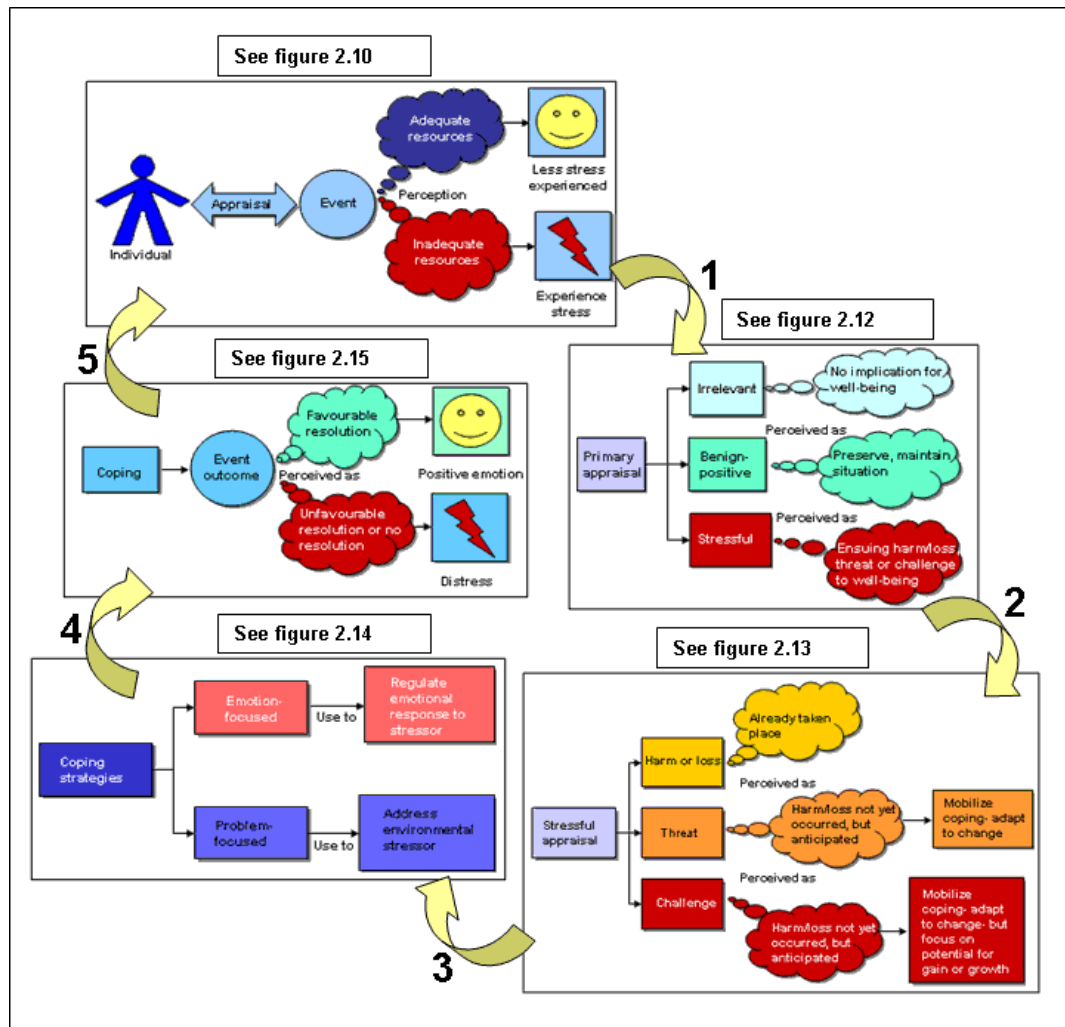


Figure 2.16 Summary of the coping process according to Lazarus and Folkman

According to the Lazarus and Folkman model of the coping process (Folkman, 1997; Lazarus & Folkman, 1984) individuals in a situation or event will constantly appraise their actions within the situational environment – step 1 in figure 2.16. If the situation is appraised as constituting a threat, challenge or harm (step 2), the individual will experience stress and will feel the need to cope (step 3) with the situation (Folkman, 1997; Lazarus & Folkman, 1984). According to this model the individual will require emotion-focused strategies to cope with distress and problem-focused coping strategies to deal with the stressor causing the distress (Folkman, 1997; Lazarus & Folkman, 1984). The use of these coping strategies (step 4) will lead to an event outcome, either a favourable resolution or an unfavourable resolution. If the event outcome is unsatisfactory this will lead to distress and further coping (step 5).

2.5.9 Synthesis

Within the context of this study it is my assumption that, by introducing a new technology to a participant, the participant will appraise the situation. If the appraisal is positive and the participant perceives their abilities to master the new technology as adequate, they will experience less stress with accompanying positive emotion. Alternatively, if the appraisal is negative and the participant perceives that they lack adequate resources, they will experience more stress. The secondary appraisal determines the type of stress experienced as the outcome depends on the response of the participant to what is at stake and what they are able to do in the situation. The participant may perceive the situation as harmless, in which case nothing will need to be done; as a threat which will necessitate the calling up of coping strategies to deal with the threat; or a challenge, in which case another set of coping strategies will be used. The participant will use emotion-focused coping strategies to cope with distress and problem-focused coping strategies to cope with the stressor. This will lead either to a favourable resolution or to another coping cycle if the outcome is not favourable.

2.6 Positive emotions and coping

This section comprises an overview of the effect of positive emotions on the coping process, and starts with an outline of new directions in coping research, followed by a discussion on the modified theoretical model of the coping process and the associated positive psychological states, and concludes with a synthesis relating positive emotions and coping to the study.

An exciting new direction in coping research is the effect of positive emotions on the outcome of the coping process in stressful contexts (Folkman & Moskowitz, 2000b; Folkman & Moskowitz, 2004). In a review of relevant studies, Folkman and Moskowitz (2000b, p. 115) report on evidence indicating that positive emotions serve as a buffer against stress. Positive reappraisal, problem-focused coping and the use of positive meaning are associated with the incidence and continuation of positive affect (Folkman & Moskowitz, 2000b). Corresponding with these findings, Carver and Scheier (1999, p. 569) reported on the difference in the coping strategies used by optimists and pessimists in a number of studies. They noted that optimists tend to use problem-focused coping strategies and, when that is not possible, they tend to use adaptive emotion-focused coping strategies such as acceptance, use of humour and positive reframing. By using these strategies optimists keep moving forward (Carver & Scheier,

1999), while pessimists disengage from their goals and use denial in order to cope. Folkman and Moskowitz (2000b) point out that these findings suggest the importance of positive emotions as tools in the establishment of improved outcomes. Echoing the interest in positive emotions, Fredrickson and colleagues (Fredrickson & Joiner, 2002; Fredrickson & Levenson, 1998; Fredrickson *et al.*, 2000; Fredrickson & Tugade, 2003) reported on the adaptive effect of positive emotions in stressful situations.

In evaluating research findings relating to the role of positive emotions in the coping process, Folkman (1997, p. 1216) saw the need for the modification of the Lazarus and Folkman model of the coping process in order to include “a third pathway that leads from the positive psychological states back to appraisal and coping”. Figure 2.17 presents the modified Folkman theoretical model of the coping process.

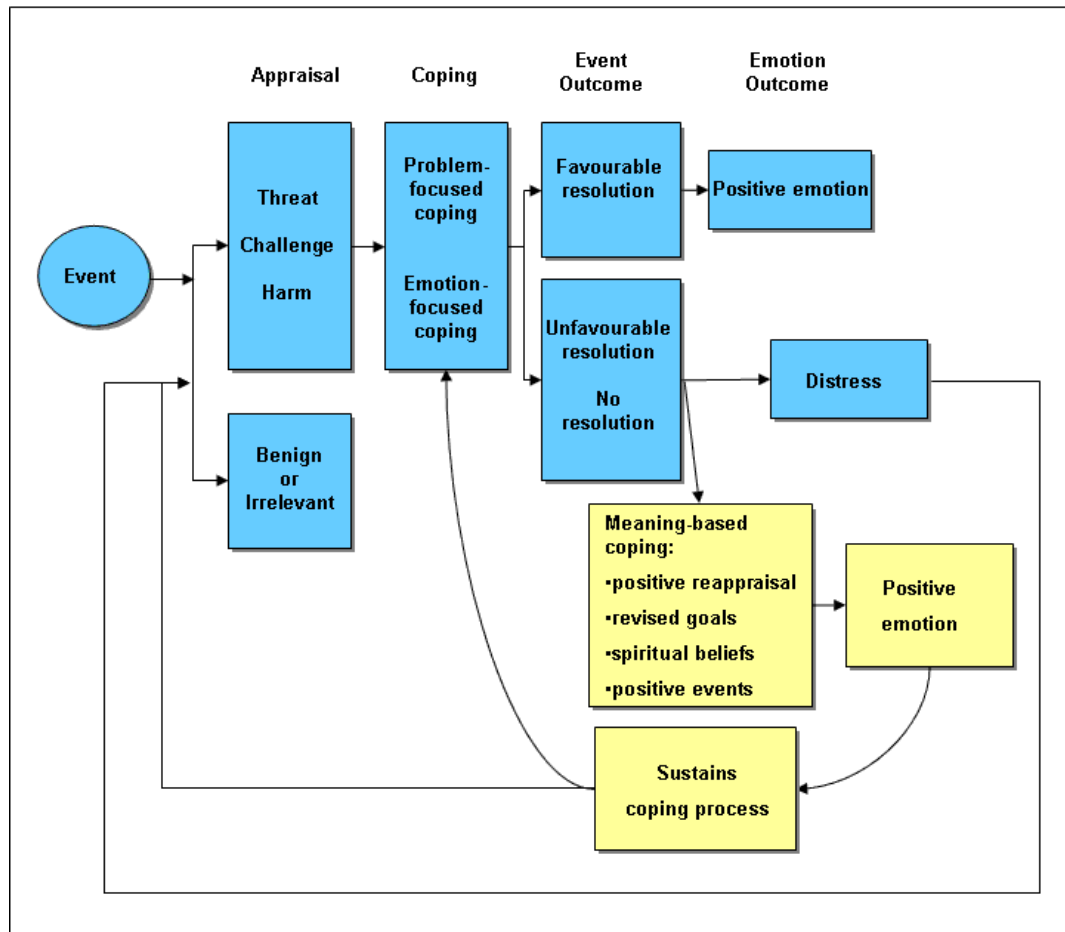


Figure 2.17 Modified Folkman theoretical model of the coping process

Folkman (1997, p. 1216) hypothesised that coping processes that produce positive psychological states and that the positive psychological states themselves may assist

the individual in sustaining renewed coping efforts. In this way positive reappraisal processes will help the individual to focus on positive meaning, and this, in turn, will motivate the use of goal-directed problem-focused coping strategies (Folkman, 1997, p. 1217).

2.6.1 Coping and positive psychological states

Folkman (1997, p. 1212) reported on findings in terms of which different approaches were used to create positive affect, even in the midst of stressful and challenging circumstances. In a review of the evidence relating to the occurrence of positive emotions under stressful conditions, Folkman and Moskowitz identified three types of coping process associated with positive psychological states, namely, positive reappraisal, problem-focused coping and the infusion of ordinary events with positive meaning (Folkman & Moskowitz, 2000b, p. 115). They pointed out the possibility of positive emotions playing a significant role in terms of adaptation in the stress process.

2.6.2 Positive reappraisal

The use of a cognitive process such as positive reappraisal enables people to focus on the positive outcomes of an event by reframing the situation in a positive light (Folkman & Moskowitz, 2000b). Examples of positive reappraisal include perceptions of personal growth or benefit (Folkman & Moskowitz, 2000b). By reappraising an event positively individuals will interrelate the event with possible benefits in terms of their values, beliefs and goals (Folkman & Moskowitz, 2004).

2.6.2.1 Goal-directed problem-focused coping

Problem-focused coping strategies, such as being goal directed, include strategies such as the gathering of information, decision making, planning and resolving conflicts, in order to solve or manage problems that impede or block goals and create distress (Folkman & Moskowitz, 2004). Folkman and Moskowitz (2000b, p. 1213) suggest that “being engaged in the pursuit of personally meaningful goals is widely considered a hall mark of good mental health in the western world”. If individuals focus on specific, proximal tasks they are more capable of identifying realistic and attainable goals (Folkman & Moskowitz, 2000b, p. 1213). Feelings of mastery and control are associated with effective problem-focused coping (Folkman & Moskowitz, 2004).

2.6.2.2 Infusion of ordinary events with positive meaning

The three most frequently cited sources of meaning found in the study by Folkman and Moskowitz (2000b, p. 1215) were a feeling of being connected and cared about, experiencing a sense of achievement and self-esteem, and having an opportunity to be distracted from everyday cares. Positive meaningful events contribute towards positive emotion in the sense that these events reaffirm the values of the individual and assist the individual to temporarily focus on these values while coping with the stressful event (Folkman & Moskowitz, 2004).

2.6.2.3 The common underlying theme

Folkman and Moskowitz (2000b, p. 1215) point out that searching for and finding positive meaning stands out as a common underlying theme during the stress process. Figure 2.18 presents a graphical representation designed to conceptualise the relationship between reappraisal and positive emotion,

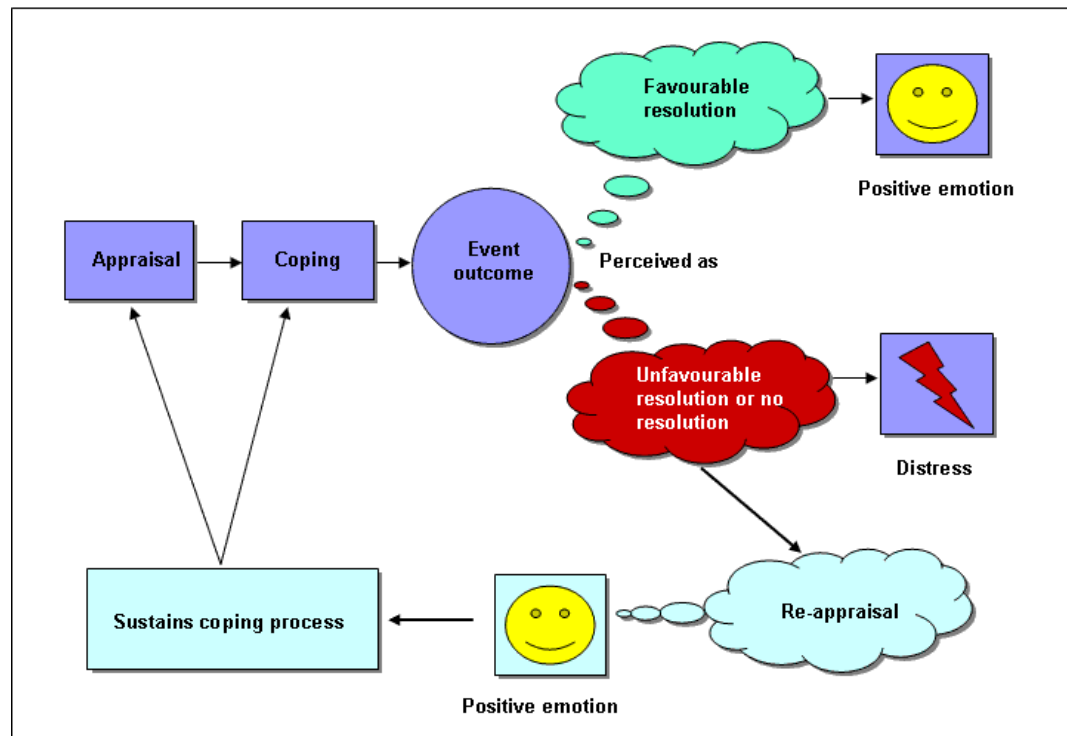


Figure 2.18 Reappraisal and positive emotion

2.6.2.4 Synthesis

From the perspective of coping strategies used when mastering new technologies, it is my assumption that certain individuals will, during the reappraisal process, use positive reappraisal, goal-directed problem-focused coping and infusion of events with positive meaning to cope with the task. Collectively these strategies involve a reappraisal process with positive emotion and the sustaining of the coping process as outcomes.

2.7 A process model of affective response

Stress is a common feature of organisational life, across all occupational domains (Ashkanasy et al., 2004, p. 2).

This section will discuss the process model of affective response as proposed by Ashkanasy, Ashton-James and Jordan (2004). As this model provides a deeper understanding of emotional intelligence as a moderator of work stress, the model has important implications for research pertaining to linkages between emotional intelligence and coping strategies. After a discussion on the implications of the model in terms of the development of a supportive organisational climate, the section concludes with a synthesis of the implications of the model in terms of the study

Ashkanasy *et al.* (2004) proposed a process model of affective response formation and modulation that provides a possible explanation for the cognitive-affective processes underlying emotional intelligence, as defined by Mayer and Salovey (1997). Their model provides an explanation of the way in which emotional intelligence serves as a moderator of the stress experienced in the workplace. In terms of this study, the model is pivotal in providing possible insight into the processes at the core of emotional intelligence, moderating the affective impact of stressors and the effect that these emotional responses have on coping strategies.

Ashkanasy *et al.* (2004) developed and integrated recent work carried out by Jordan, Ashkanasy and Hartel (2002; Jordan, Ashkanasy, & Hartel, 2003), the Affective Events Theory of Weiss and Cropanzano (1996) and studies on emotional intelligence by Mayer and Salovey (1997). The model presented by Ashkanasy *et al.* (2004) is illustrated in figure 2.19.

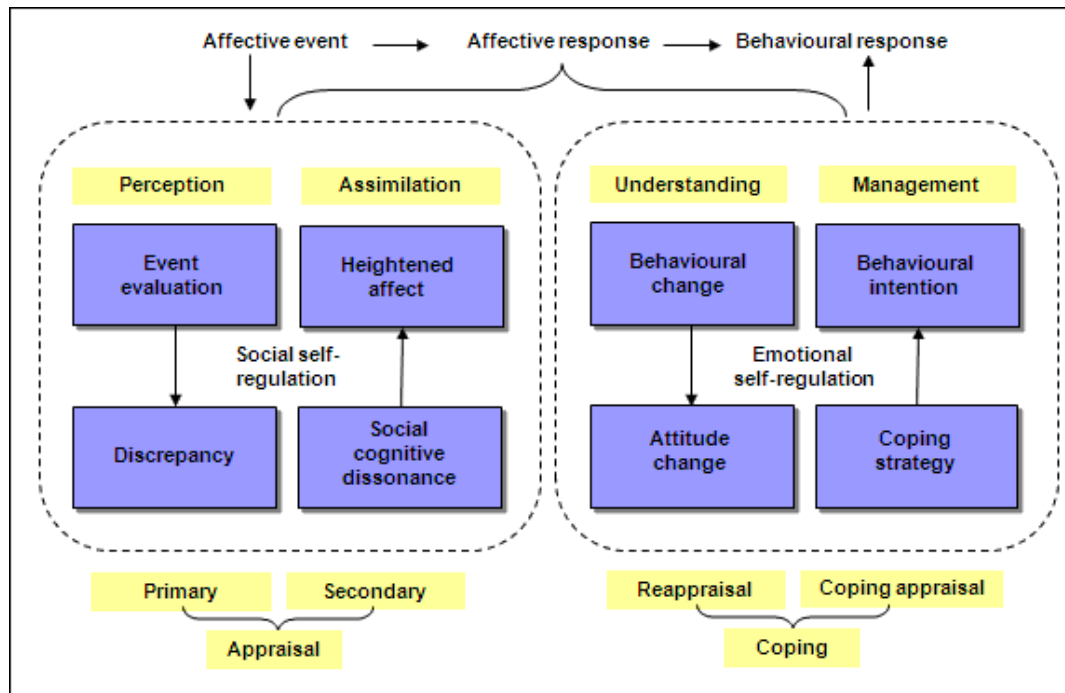


Figure 2.19 A Process Model of Affective Response

Source: Adapted from Ashkanasy *et al.*, 2004

This study will draw **only on those aspects of the model, which pertain to those components of emotional intelligence incorporated in the process of stress appraisal and coping**, indicated in the figure highlighted in yellow. Consistent with Mayer and Salovey (1995; Mayer & Salovey, 1997), Ashkanasy *et al.* (2004, p. 29) propose that, during the process of self-regulation, the different components function more or less interdependently. According to their model, emotional perception is involved in the process of primary appraisal, emotional assimilation with secondary appraisal, emotional understanding with the first component of coping, namely reappraisal, and emotional management with effective self-regulation (Ashkanasy *et al.*, 2004, p. 29). Figure 2.20 presents a diagram designed to represent the process model for affective response in terms of the Mayer and Salovey model of emotional intelligence showing the interlinked nature of appraisal, coping and emotional intelligence.

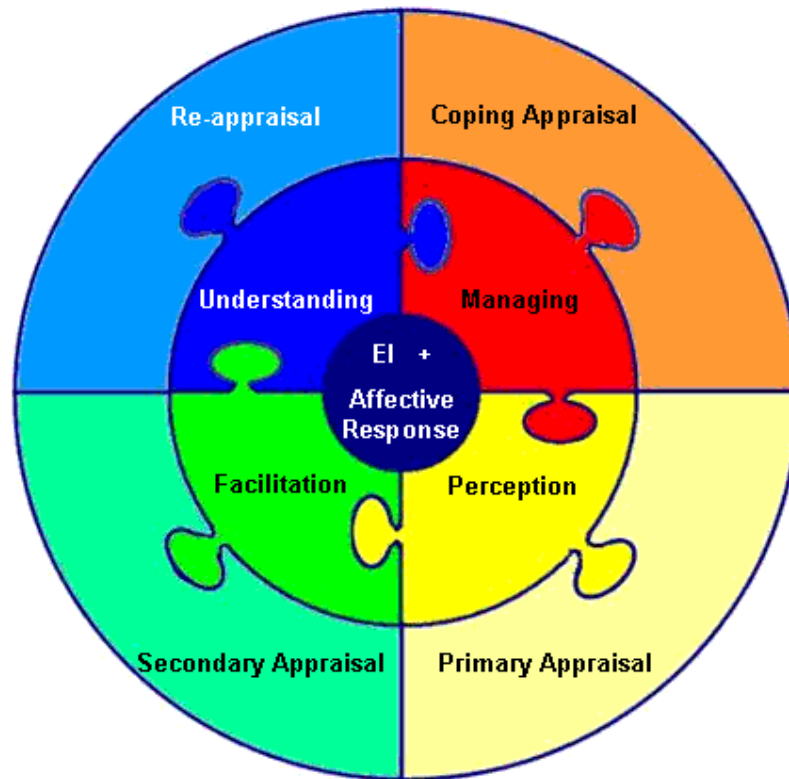


Figure 2.20 The process model of affective response in terms of EI

The relationship between emotional intelligence and coping, as proposed by Ashkanasy *et al.* (2004, p. 35), is modelled in accordance with the four branches of emotional intelligence as conceptualised by Mayer and Salovey (1997). Their model attempts to explain why individuals with diverse emotional intelligence profiles differ in their capacity “to appraise and to cope with the processes inherent in their affective responses to events in their environment” (Ashkanasy *et al.*, 2004, p. 35). According to Ashkanasy *et al.*’s model, emotional perception determines accurate primary appraisal, emotional assimilation determines secondary appraisal, and emotional understanding determines “the accuracy of reappraisal and subsequent attitudinal or behavioural change, and the efficacy of coping, and the monitoring of the success of social psychological adjustments to affective responses can be explained in terms of emotional management” (Ashkanasy *et al.*, 2004, p. 35).

2.7.1 Perceiving emotion: Primary appraisal

Ashkanasy *et al.* argue that the issue of emotional awareness is important and, in particular, in the discussion on the link between emotional intelligence and coping, since “emotional self-awareness is a starting point for dealing with an appraisal of

stress” (2004, p. 19). According to Ashkanasy *et al.*, the feelings that emerge following the appraisal of stress drive the emotional and behavioural consequences that follow. They are also of the opinion that the ability to recognise the emotions of others and the sincerity of these emotional expressions are of use in dealing with stressful situations (Ashkanasy *et al.*, 2004). For example, individuals may compare their situation and their feelings in relation to others in the same situation. If, during this comparison, they observe that the other parties appear stressed or distressed, this may contribute to their selection of an appropriate coping strategy (Ashkanasy *et al.*, 2004, p. 20).

2.7.2 Facilitating thought: Secondary appraisal

The ability to facilitate thought is linked to a person’s appraisal of the situation during which they may experience a range of emotions including frustration, anger and fear (Ashkanasy *et al.*, 2004). The ability to assimilate emotions will enable a person to process cognitively the reasons why these feelings are being experienced in order to determine whether these emotions are appropriate in the particular situation (Ashkanasy *et al.*, 2004, p. 19). Ashkanasy *et al.* propose that this ability will also determine the level of stress that the person will experience during the appraisal process. This ability to assimilate emotions may also act as a trigger for the level of emotional management required in choosing an appropriate coping strategy (Ashkanasy *et al.*, 2004, p. 20). For instance, if the initial emotional reaction were out of proportion to the stressor, then the individual would need to exercise a greater degree of emotional control. Ashkanasy *et al.* (Ashkanasy *et al.*, 2004) use the analogy of a jammed photocopying machine to illustrate this point. A range of familiar reactions may result from this type of incident (fixing the problem) – “problem-based strategy with good emotional control emanating from the assessment of a mild inconvenience” to a major tantrum involving swearing and kicking the copier, or emotion-focused strategy of blaming with poor emotional control emanating from the assessment of a major obstacle” (Ashkanasy *et al.*, 2004, p. 20).

According to these authors this branch includes the ability to “adopt multiple perspectives to assess a problem from all sides, including pessimistic and optimistic perspectives” (Ashkanasy *et al.*, 2004, p. 20). They state that a person is able to determine the appropriate emotional state facilitating the solution to the problem, or the conflicting emotions experienced may be resolved by adopting multiple perspectives (Ashkanasy *et al.*, 2004). The adoption of multiple perspectives may provide a key

process that will enable a person to break the cycle of negativity that could emerge as a result of the stress experienced (Ashkanasy *et al.*, 2004).

2.7.3 Understanding emotions: Re-appraisal

Ashkanasy *et al.* (2004, p. 20) refer to this branch of understanding emotions as “the ability of individuals to recognize the likely transitions between emotions, moving, for example, from feelings of anger or hopelessness if the threat is appraised as insurmountable”. The recognition and analysis of the succession of emotions that will emerge from perceptions is vitally important in order to defeat possible negative responses to emotions (Ashkanasy *et al.*, 2004). Ashkanasy *et al.* explain that emotional understanding may contribute to a resolution of the feelings of emotional dissonance that may emerge from an appraisal of stress in the same way that the generation of multiple perspectives may assist in interrupting negative-coping cycles. The branch of understanding emotions helps to prepare a person for the emotions they may expect to encounter during a stressful period in the same way that understanding the grief cycle assists a person to come to terms with painful periods of grief in their life (Ashkanasy *et al.*, 2004). An understanding of the varying emotions that emerge during a stressful episode may assist the process of overcoming negative feelings in order to address the problem (Ashkanasy *et al.*, 2004).

2.7.4 Managing emotions: Coping appraisal

Ashkanasy *et al.* (2004, p. 21) state that an ability to detach from feelings of frustration that arise during the perception of stress may be useful if these feelings of frustration are distracting. This statement is in accordance with Salovey (2001) who suggests that, in reality, emotional management involves focusing on actions that are of the utmost importance for one’s health. Therefore, in line with the literature on coping, Ashkanasy *et al.* (2004, p. 21) suggest that, depending on the best outcome, there are occasions during which emotion-focused strategies that entail the expression of emotion should be used, and other occasions when the suppression of emotion would present the best outcome.

The model of these authors (2004) provides a deeper understanding of emotional intelligence as a moderator of work stress and, in the case of the proposed study, of the stress encountered in mastering new educational technologies with subsequent coping strategies. Their model has an important implication for research pertaining to linkages between emotional intelligence and coping strategies as it provides “a

framework for studying the interaction of personal characteristics and environment as determinants of behaviour. From a practical perspective, the model implies that development of a supportive organizational climate that will facilitate positive interactions is an important goal for managers” (Ashkanasy *et al.*, 2004, p. 37).

2.7.5 Synthesis

Participants with diverse emotional intelligence profiles will, because of their disparate emotional abilities in terms of perceiving, facilitating, understanding and managing emotions, differ in their capacity to cope effectively with mastering new educational technologies.

2.8 Emotional intelligence and coping

In the previous sections, different constructs relating to the coping process in terms of emotional intelligence skills were discussed. These constructs relate to the conceptual framework discussed in §2.1, which will guided the qualitative analysis of the data, discussed chapter 3. In this section I argue for the inclusion of facilitating in the Emotional Coping Hierarchy⁹ developed by Salovey, Bedell, Detweiler and Mayer (1999).

The following section examines the Emotional Coping Hierarchy developed by Salovey, Bedell, Detweiler and Mayer (1999). The Emotional Coping Hierarchy facilitates the application of emotional intelligence to the coping process and the processes linked with the coping process. In this study the Emotional Coping Hierarchy was used to interpret the quantitative data (EI scores of participants, measured with the MSCEIT™) as discussed in chapter 3 and 4. This will be followed by an examination of emotional intelligence linked to the coping process from the viewpoint of Salovey and colleagues. The section will conclude with a synthesis related to this study.

Salovey and colleagues developed a hierarchy of emotional competencies to “facilitate the application of emotional intelligence to the coping process” (Salovey *et al.*, 1999, p. 146). Included in their hierarchy are those competencies of emotional intelligence most relevant to the coping process according to these authors. Upon reflection of this hierarchy and going back to the literature, the researcher is of the opinion that their

⁹ Initially Salovey and Mayer had three branches in their EI model, but adapted the model to include four branches.

hierarchy reflect the initial conceptualisation of Salovey and Mayer as described in their article *Emotional Intelligence* (1990, p. 190). At that stage, their conceptualisation of emotional intelligence consisted of three branches, namely appraisal and expression of emotion, regulation of emotion and utilisation of emotion. Figure 2.21a provides an illustration of the relevant competencies of emotional intelligence in the emotional coping hierarchy as suggested by Salovey *et al.*(1999).

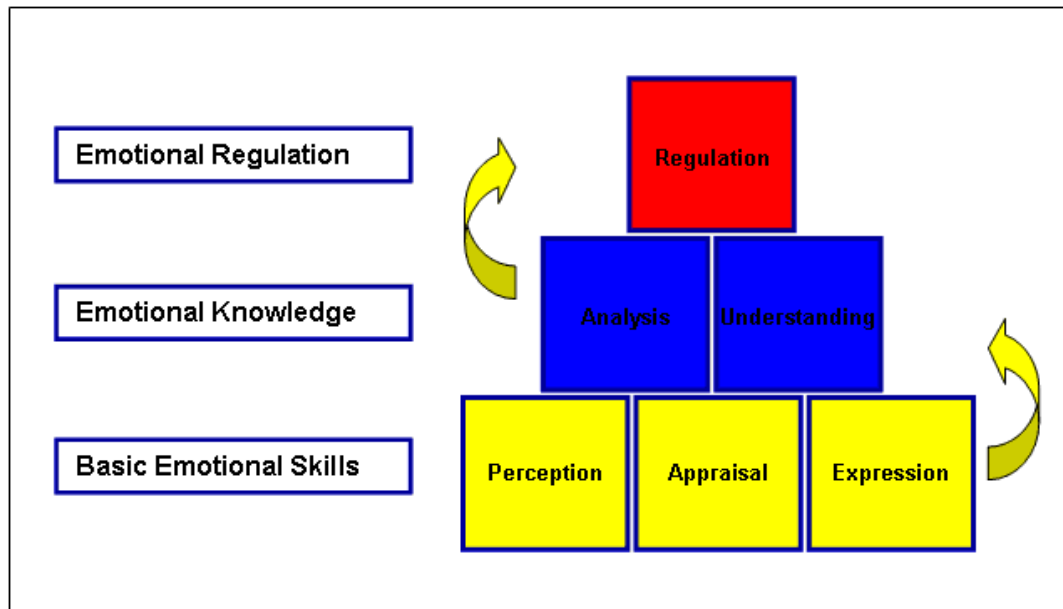


Figure 2.21a The Emotional Coping Hierarchy

Source: Adapted from (Salovey *et al.*, 1999, p. 146)

Salovey *et al.* (1999, p. 144) state:

Second, we must recognize that emotions prioritize thinking, shape memory, create different problem-solving perspectives, and facilitate creativity.

Reflecting on the importance of facilitation of emotions on the development of understanding and regulation and managing of emotions, the researcher adapted the emotional coping hierarchy to include the second branch of emotional intelligence, facilitation in the first level of basic emotional skills. . Figure 2.21b provides an illustration of the relevant competencies of emotional intelligence in the adapted emotional coping hierarchy.

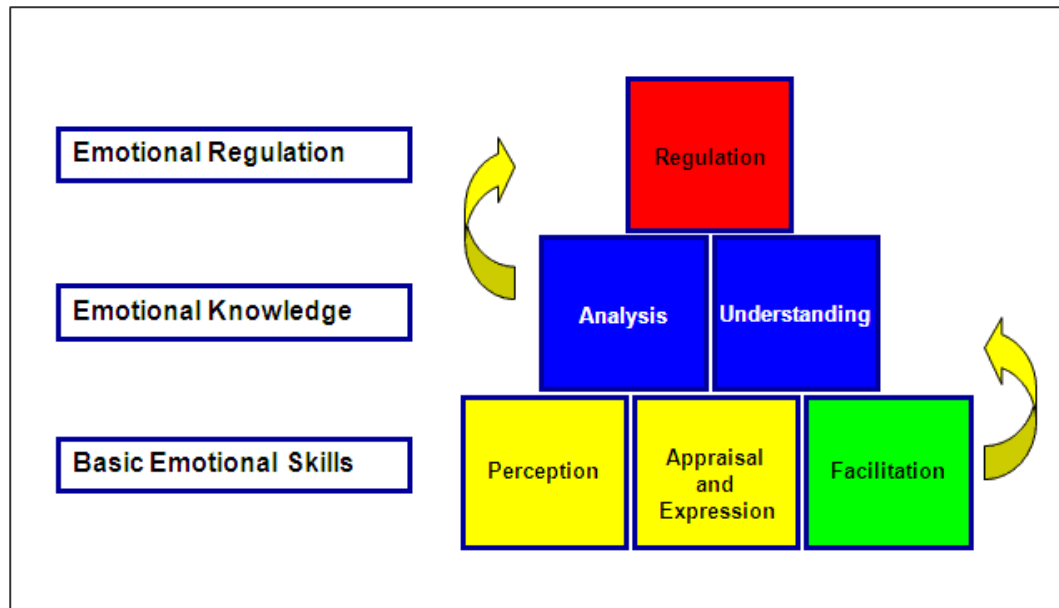


Figure 2.21b The Emotional Coping Hierarchy: Adapted by researcher

Source: Adapted from (Salovey *et al.*, 1999, p. 146)

The first level of the emotional coping hierarchy incorporates the basic emotional intelligence skills of perception, appraisal, expression and facilitation. Understanding and analysis, which, according to Salovey *et al.* (1999), are more sophisticated subcomponents of emotional knowledge, are on the second level. Emotional regulation is placed on the third level. These authors believe that the “entire hierarchy of emotional coping skills must be successfully developed and employed” (Salovey *et al.*, 1999, p. 146) in order for successful coping to take place.

In their discussion of coping skills in relation to emotional intelligence, Salovey *et al.* link three processes with coping skills, namely, rumination, social support and emotional disclosure. In the next sections, these processes will be discussed in relation to coping with the mastering of new educational technologies.

2.8.1 Ruminative coping

Experiencing stressors is an inevitable part of life and individuals respond in significantly different ways to these stressors (Salovey *et al.*, 1999). According to Salovey *et al.* (1999) it is natural to spend time thinking about a stressful event, although the length of time that individuals spend on this thinking may vary. Individuals who are prone to thinking excessively about a specific stressor are employing ruminative coping. Salovey *et al.* (1999) define rumination as focusing inertly and

continually on the situation and on feelings of distress. They report on findings that rumination is a maladaptive coping strategy, as individuals who are inclined to rumination will experience more frequent and longer lasting episodes of depression, which in turn result in their not being able to cope effectively.

Salovey *et al.* (1999) link emotional intelligence to rumination and coping and argue that the ability to appraise and express emotions correctly is the most basic building block of emotional intelligence. The ability to appraise and express emotions accurately also entails an ability to recognise and identify emotions within oneself. The emotionally intelligent individual will possess the ability to articulate feelings clearly (Salovey *et al.*, 1999). These authors believe that the capacity to be clear about feelings and moods will aid an individual to break out of a ruminative cycle. Furthermore, they point out that “the ability to manage emotions in oneself by moderating negative emotions and enhancing pleasant ones is considered one of the most advanced skills within the reflective regulation of emotion” (Salovey *et al.*, 1999, p. 151).

An important aspect of emotional intelligence, as mentioned by Salovey *et al.* (1999), is the balance between experiencing emotion and deciding when to use distraction in order to cope effectively. They stress the important distinction between distraction and negative avoidance actions. The more emotionally intelligent individual will be able to decide when it is appropriate to employ healthy functional distraction coping strategies, such as seeking social support (Salovey *et al.*, 1999). The use and development of social support in successful and healthy coping is the second process linked to emotional intelligence.

2.8.2 Social support

Salovey *et al.* (1999, p. 151) contend that “social support appears to play a critical role in successful and healthy coping”. They argue that the more emotionally intelligent individuals are more likely to gain access to social support networks and to rely on these networks in times of stress and duress. According to Salovey *et al.* (1999), emotional intelligence equips individuals with the necessary skills to enable them to build supportive social networks. Moreover, emotionally intelligent individuals will be more likely to use these supportive social networks as resources enabling them to cope effectively.

2.8.3 Emotional disclosure

Salovey *et al.* (1999, p. 155) also apply the emotional intelligence framework to emotional disclosure. They view the disclosure of emotional experiences as an imperative part of the coping process. Linguistic features characterising effective emotional disclosure are reflections on the ability to understand, analyse and actively regulate emotions. Salovey *et al.* (1999) argue that, in comparison with individuals who are overwhelmed by negative experiences, emotionally intelligent individuals are more likely to cope efficiently with stressful situations. According to them the more emotionally intelligent individuals are more likely to share emotions and feelings by using diaries and journals, since they have the emotional knowledge to do so (Salovey *et al.*, 1999). Emotional disclosure, by means of writing and sharing emotions, is, according to Salovey *et al.* (1999), an efficient way of regulating emotions.

These authors postulate that these three aspects, ruminative coping, social support and emotional disclosure, are interrelated in the sense that emotionally intelligent individuals have skills that assist them in avoiding rumination, building supportive networks and effectively relating emotions (Salovey *et al.*, 1999). In terms of this study the framework of emotional intelligence establishes a hierarchy of emotional competencies that may serve as a guide to pinpoint where the breakdown in coping skills occurs.

2.8.4 Applying emotional intelligence to the coping process

Salovey *et al.* (1999, p. 157) state that they originally proposed the framework of emotional intelligence “to enumerate and describe *specific* emotional competencies”. The failure of an individual to cope effectively with a stressful situation may be attributable to a lack of one of these competencies. Furthermore, Salovey *et al.* believe that it is possible to work on and increase emotional competencies. They state that more research is needed to examine the relationship between emotional intelligence and the coping process.

2.8.5 Synthesis

As a reflection of their ability to understand, analyse and regulate their emotions, it is assumed in this study that more highly emotionally intelligent individuals will be able to

recognise when they are experiencing an emotion that requires a reaction in terms of emotional disclosure. These individuals will possess the insight and causal thinking skills, which enable them to understand and analyse the emotions caused by a stressful experience and to cope effectively. Conversely, it is assumed for the purposes of this study that less emotionally intelligent individuals will not have the capacity to perceive and appraise their emotions accurately, and will, therefore, be unable to recognise the origin of the dilemma.

It is also assumed that the more emotionally intelligent individuals will possess the emotional competencies to manage their emotions by moderating negative emotions and concentrating on positive emotions, thereby enabling these individuals to resist rumination. In contrast, the assumption is made that less emotionally intelligent individuals will have difficulty in appraising and understanding the emotions caused by a stressful event, and this will render them unable to gain clarity and to label emotions. Therefore, as a result of being unable to make sense of their emotional experiences and because of the need for some kind of meaning-making activity, less emotionally intelligent individuals will tend to employ ruminative coping.

It is assumed that the more emotionally intelligent individuals will be equipped with skills, which will enable them to make use of social networks as a resource and a buffer against stress. Conversely, less emotionally intelligent individuals will lack the skills to utilise social support during the coping process.

2.9 Working assumptions

Throughout the chapter, syntheses of specific concepts in terms of this study were added in order to elucidate the role of the concepts within the conceptual framework. Collectively, these syntheses form working assumptions in the exploration to find linkages between emotional intelligence and the coping strategies used when mastering new educational technologies.

In conjunction with the Emotional Intelligence Hierarchy of Salovey and colleagues (1999), these syntheses have been collated by the author to form the following working assumptions:

Assumption 1:

For the purposes of this study it is assumed that, if the individual perceives the situation to be favourable in terms of the fact that they possess the capabilities to handle the situation, they will, accordingly, experience less stress and be able cope adequately. In the event of perceiving the situation as stressful it is assumed that the more emotionally intelligent individual will take responsibility for finding a solution to the problem, they will show resiliency and use creativity, optimism and insight in their use of functional problem-focused coping strategies. Conversely, the less emotionally intelligent individuals will use dysfunctional problem-focused coping strategies in terms of an inability to take responsibility, and pessimistic views of their capacity to solve the problem.

Assumption 2:

As a reflection of their ability to understand, analyse and regulate their emotions, this study assumes that more emotionally intelligent individuals will be able to recognise that they are experiencing an emotion that requires a reaction in terms of emotional disclosure. These individuals will possess the insight and causal thinking skills that enable them to understand and analyse the emotions caused by a stressful experience and to cope effectively. Conversely, less emotionally intelligent individuals will not be able to perceive and appraise their emotions accurately, and will therefore be unable to recognise the origin of the dilemma, thus manifesting an inability to cope effectively.

Assumption 3:

This study also assumes that the more emotionally intelligent individuals will have the emotional competencies to manage their emotions by moderating negative emotions and concentrating on positive emotions, thereby enabling them to resist rumination. In contrast, I assume that less emotionally intelligent individuals will experience problems in appraising and understanding the emotions caused by a stressful event, and this, in turn, will give rise to an inability to gain clarity and to label emotions. As they are unable to make sense of their emotional experiences and because of the need for some kind of meaning-making activity, it is assumed that less emotionally intelligent individuals will tend to employ ruminative coping or avoidance coping strategies.

Assumption 4:

This study makes the assumption that more emotionally intelligent individuals will be equipped with those skills which will enable them to make use of social networks as a

resource and a buffer against stress. Conversely, less emotionally intelligent individuals will lack the necessary skills to utilise social support during the coping process.

2.10 Summary

Figure 2.22 summarises this chapter.

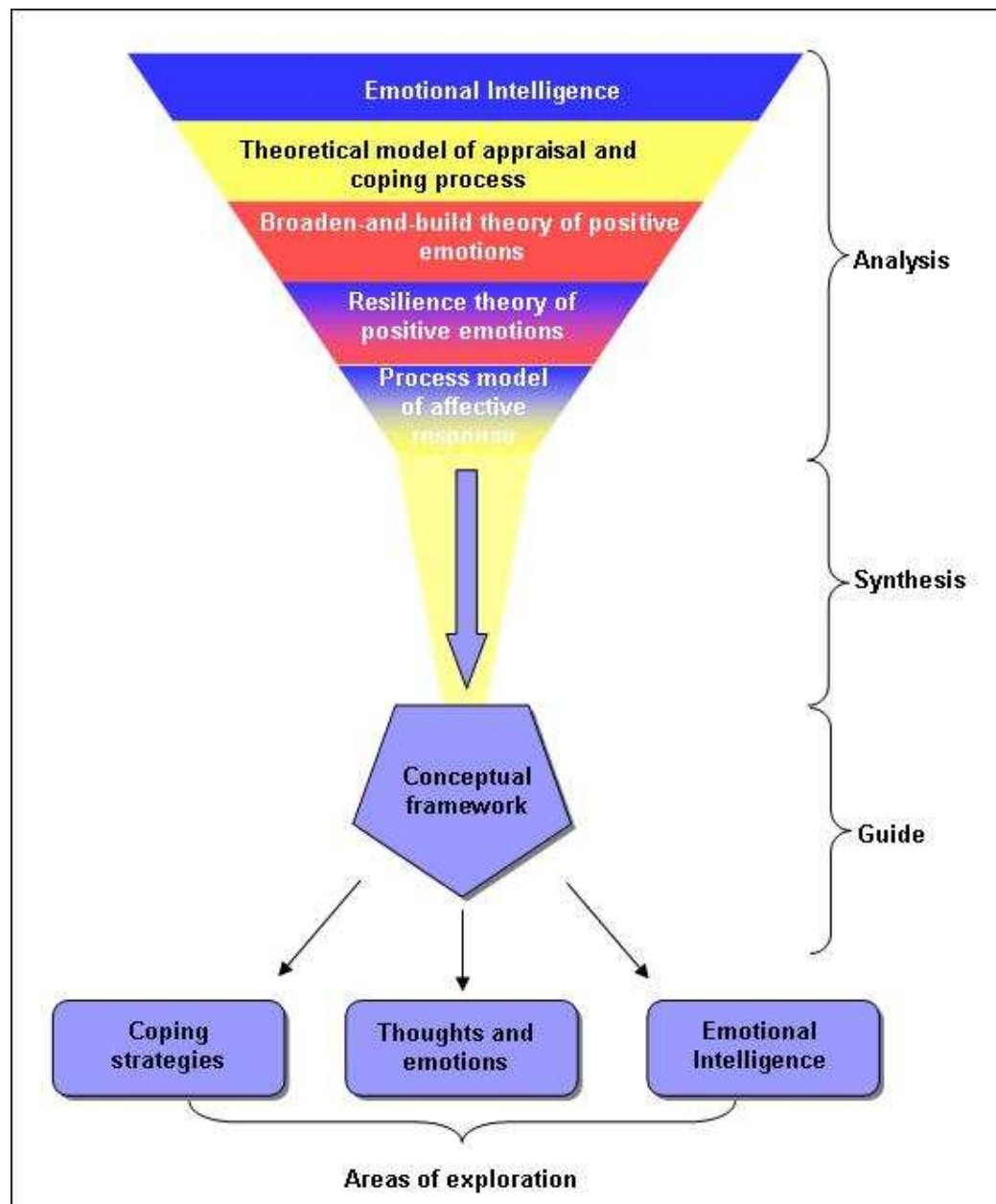


Figure 2.22 Summary of chapter 2

This chapter explored, analysed and synthesised literature on the constructs of emotional intelligence, stress, appraisal, coping and resilience, and combined these constructs into the conceptual framework that will guide the study. The areas explored are the coping strategies used by the participants when mastering new educational technologies, their thoughts and emotions while making use of these coping strategies, and the trends regarding linkages between emotional intelligence and the coping strategies employed. The next chapter presents the research methodology and research design followed in order to address the research problem.

Chapter 3: Methodology

What we think or what we know or what we believe is, in the end, of little consequence. The only consequence is what we do.
John Ruskin

3.1 Introduction

In the previous chapter, the constructs emotional intelligence, positive emotions, resilience, stress, appraisal and coping were explored, analysed and synthesised, and the conceptual framework developed was presented. The purpose of this chapter is to present the research strategy followed in seeking answers to the research questions. Figure 3.1 presents a visual model of the research strategy.

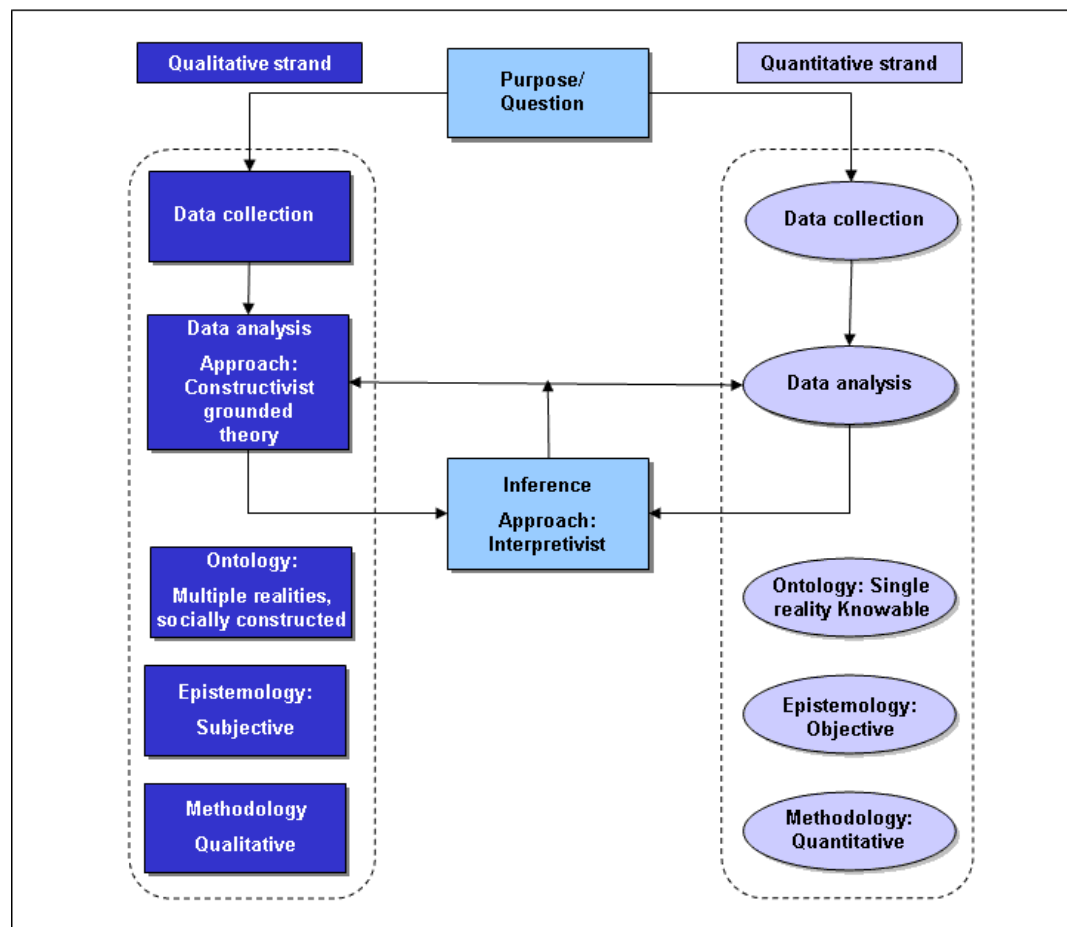


Figure 3.1 Visual model of the research strategy

Source: Adapted from Tashakkori and Teddlie (2003a, p. 688)

I chose to apply a multistrand concurrent mixed methods design adapted from Tashakkori and Teddlie (2003a, p. 688) in this study. A mixed methods approach provided an opportunity to “confirm, cross-validate or corroborate” the theoretical emotionally intelligent abilities of participants (quantitative) with the demonstrated emotionally intelligent abilities (qualitative) in answering the research question.

In figure 3.1, the use of colour distinguishes between the priority of the two strands used in the research strategy, namely a qualitative strand and a quantitative strand. The researcher adopted a mixed methods approach in order to address the research problem. The darker colour of the qualitative strand, depicts the priority of the use of qualitative data in the study, against the lighter colour of the quantitative strand, depicting the use of quantitative data to a lesser extent.

As qualitative and quantitative viewpoints differ in terms of ontology, epistemology, and methodology, the viewpoint of the researcher true to a mixed methods approach, was to make use of various paradigms. Pragmatism served as the foundation of the study, but an interpretivist stance was adopted in studying the participants’ experiences, emotions and coping strategies, and a constructivist grounded theory approach during analysis and interpretation of the data. These choices will be discussed to a greater extent in the following sections of this chapter.

To address the research problem in this study, a mixed methods approach provided an opportunity to “confirm, cross-validate or corroborate” the theoretical emotionally intelligent abilities of participants (quantitative) with the demonstrated emotionally intelligent abilities (qualitative). Firstly, the main research question and sub-questions are presented, followed by a statement of the purpose of this mixed methods study. This section is then followed by a discussion of the research methodology. Next, the data collection is discussed, followed by the data analysis and the data interpretation. Subsequently, my role as researcher is clarified, the strategies followed to ensure trustworthiness are explained. The chapter concludes with the ethical considerations pertaining to this study.

3.2 Research question and sub-questions

As stated in chapter 1, the main research question and subsequent sub-questions address the possibility of whether emotional intelligence has a role to play in coping with the mastering of new educational technologies. The main research question is:

- What are the linkages between emotional intelligence and coping strategies when mastering new educational technologies?

In order to explicate the main research question, I have formulated three sub-questions:

- What strategies do participants with diverse emotional intelligence profiles implement to master new educational technologies?
- What were the cognitive thought processes and emotions experienced by the participants while using diverse coping strategies?
- What are the trends regarding linkages between emotional intelligence and the coping strategies used by participants?

The study aims to address the main research question by seeking answers to the sub-questions.

3.3 Purpose

Against the background of the drive towards e-learning in higher institutions with expectations of an increase in input rates and retention, the successful mastering of new educational technologies by lecturers is becoming crucial. The purpose of the study is to explore and describe linkages between emotional intelligence and the ability to cope with mastering new educational technologies. By clarifying the role of emotional intelligence in coping with the mastering of new educational technologies, the study may contribute towards the emerging body of knowledge, thereby providing guidelines for facilitators in optimising training in blended learning environments.

3.4 Research methodology

This study comprises a mixed methods approach within a case study design. In this section, the case study research design is discussed, followed by the nature of mixed methods research. The criteria that had to be considered when deciding on a mixed methods research strategy are then discussed and this section concludes with a discussion of the philosophical underpinning of the study.

3.4.1 Case study design

Creswell (2007, p. 73) defines case study research as an approach “in which the investigator explores a bounded system (a case) ... over time, through detailed, in-depth data collection involving multiple sources of information”. There are several procedures advocated for case study research (Merriam, 1998; Stake, 2000). In this study, procedures suggested by Creswell (2007, p. 74) for conducting a mixed methods case study were followed.

To begin with, as researcher I had to decide whether a case study approach was appropriate for the research problem of the study. According to Creswell (2007, p. 74), a case study “is a good approach when the enquirer has clearly identifiable cases with boundaries and seeks to provide an in-depth understanding of the cases”. As I wanted to explore the linkages between coping strategies and emotional intelligence in a blended learning environment, the 2004 participants in the Partners@Work programme at the Department of Telematic Education at the Tshwane University of Technology were a natural choice as a case. Participants in this programme had to cope with mastering new educational technologies, as the intention of the programme was to introduce new educational technologies and facilitate the use of technology to enhance university courses.

Having identified the case, I then had to consider which type of case study would be the most useful for my study (Creswell, 2007). I decided on an instrumental case study, as this would allow me to collect primary data that would enable me to explore the participants’ emotional experiences, cognitive thought processes and coping strategies when mastering new educational technologies. Stake (2000, p. 437) describes the instrumental case study as one where the particular case is of secondary interest, supporting the researcher in providing insight into an issue. The purpose of an instrumental case report, according to Stake (2000, p. 448), “is not to represent the world, but to represent the case”; therefore my focus was on understanding the particulars of this specific case in its complexity.

The advantage of case research for researchers lies “in its extension of experience” (Stake, 2000, p. 449) and is particularly useful for this study where a deep understanding of the phenomenon is needed – in this case the coping strategies employed to master new educational technologies. Merriam (1998) maintains that a case study is particularly helpful to the researcher in understanding and discovering

context characteristics that will shed light on an issue: in this study the cognitive thought processes and emotions experienced by the participants while using diverse coping strategies.

A criticism often noted against case study methodology is the influence of the researcher's subjective feelings on both the collection and interpretation of data (Denzin & Lincoln, 2000). To guard against potential researcher bias, I reflected on the possible influence of my own viewpoints and asked peers to review the written record of the study in order to verify that my bias is limited and that the essence of the participants' lived experience is captured.

3.4.2 Nature of mixed methods research

In a brief historical analysis of the development of mixed methods research, Teddlie and Tashakkori (2003, p. 4) maintain that researchers in the social and behavioural sciences are currently divided into three groups:

- “quantitatively oriented researchers (QUANs) working within the postpositivist tradition and primarily interested in numerical analyses,
- qualitatively oriented researchers (QUALs) working within the constructivist tradition and primarily interested in the analysis of narrative data, and
- mixed methodologists working within other paradigms (e.g., pragmatism ...) and interested in both types of data”(Teddlie & Tashakkori, 2003, p. 4).

Researchers have debated the relative value of quantitative and qualitative research paradigms over the years (Johnson & Onwuegbuzie, 2004). This has resulted in the purists emerging on both sides viewing their paradigms as being ideal for research (Johnson & Onwuegbuzie, 2004; Lincoln & Guba, 1985; Tashakkori & Teddlie, 2003b). Teddlie and Tashakkori (2003) note that during the first half of the 20th century, the foremost methodological orientation was the positivist paradigm using quantitative methods. As a response to difficulties associated with positivism, postpositivists transformed this orientation during the 1950–1970 period although methods stayed quantitative (Teddlie & Tashakkori, 2003).

Teddlie and Tashakkori (2003, p. 5) name qualitatively oriented researchers, such as Eisner, Geertz, Lincoln and Guba, Stake and Wolcott, who were critical of the positivist orientation and who proposed an extensive variety of qualitative methods in books

written during the period 1970–1985. According to Teddlie and Tashakkori (2003), during this period the qualitative orientation was popularly referred to as constructivism, but in recent theoretical works (e.g., Lincoln & Guba, 2000 and Schwandt, 2000) it has been concluded that “multiple paradigms ... are applicable to qualitative research (2003, p. 5).

During the 20th century and continuing into the 21st century, researchers made use of mixed methods in their research. Teddlie and Tashakkori (2003, p. 5) posit that, before the paradigm wars, mixed methodologists did not see the need to call attention to mixed methods as a distinct orientation. These authors state that researchers using mixed methods to answer research questions were not aware of doing anything out of the ordinary. Only after the incompatibility thesis, which put forward the notion that qualitative and quantitative paradigms cannot and should not be mixed, were researchers made aware of doing something exceptional (Teddlie & Tashakkori, 2003, p. 5).

Johnson and Onwuegbuzie (2004, p. 17) define mixed methods research as “the class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language into a single study”.

Johnson and Onwuegbuzie (2004, pp. 14-15) argue that “that the goal of mixed methods research is not to replace either of these approaches but rather to draw from strengths and minimize the weaknesses of both in single research studies and across studies”. With mixed methods research, strategies of inquiry are used that involve the collection of data either sequentially or simultaneously, that is, the best way in which to comprehend the research problem.

According to Johnson and Onwuegbuzie (2004, p. 21) the following strengths of mixed methods research apply to this study:

- Mixed methods research can provide quantitative and qualitative research strengths.
- Qualitative and quantitative research used together produce a more complete knowledge base for answering the research questions.

To address the research problem in this study, a mixed methods approach provided an opportunity to “confirm, cross-validate or corroborate” the theoretical emotionally

intelligent abilities of participants (quantitative) with the demonstrated emotionally intelligent abilities (qualitative).

Tables 3.1 and 3.2 present the application of both quantitative and qualitative research strengths in this study.

Table 3.1 Strengths of qualitative research applied

Strengths	Application in this study
<i>The data are based on the participants' own categories of meaning.</i>	Data used in this study comprises reflections posted in an online reflective diary, and a prompted essay and a summary written by participants.
<i>Qualitative research is useful for describing complex phenomena.</i>	Exploring and describing the coping strategies used by participants in mastering new educational technologies
<i>Provides individual case information.</i>	Information from document analysis
<i>Provides understanding and description of people's personal experiences of phenomena (i.e. the "emic" or insider's viewpoint).</i>	Participants' experiences, feelings and thoughts – supplying their own viewpoint on how and why they coped or did not cope.
<i>Can describe in rich detail phenomena as they are situated and embedded in local contexts.</i>	Unit of analysis provided data that enabled researcher to describe in rich detail participants; feelings, thought processes and coping strategies.
<i>The researcher identifies contextual and setting factors as they relate to the phenomenon of interest.</i>	Factors influencing the participants' coping strategies
<i>The researcher can study dynamic processes (i.e. documenting sequential patterns and change).</i>	Feelings, thought process related to coping strategies employed
<i>The researcher can use the primarily qualitative method of "grounded theory" to generate inductively a tentative but explanatory theory about a phenomenon.</i>	Constructivist grounded theory used in analysis and interpretation of data.
<i>Can determine how participants interpret "constructs" (e.g. self-esteem, IQ).</i>	From the data it was possible to determine how participants interpret their ability to cope with mastering different technologies.
<i>Qualitative data in the words and categories of participants lend themselves to exploring how and why phenomena occur.</i>	Stories told by participants made possible exploration of how and why different coping strategies were used.
<i>An important case may be used to demonstrate a phenomenon vividly to the readers of a report.</i>	The unit of analysis provided rich data to demonstrate the use of different coping strategies used by participants with varying emotional intelligence scores.

Table 3.2 Strengths of quantitative research applied

Strengths	Application in this study
<i>Useful for obtaining data that allow quantitative predictions to be made.</i>	The emotional intelligence scores allowed predictions to be made in terms of participants' predicted emotional intelligence skills.
<i>Provides precise, quantitative, numerical data.</i>	The emotional intelligence scores provided precise numerical data in terms of total, area and branch scores.
<i>The research results are relatively independent of the researcher (e.g. effect size, statistical significance)</i>	The MSCEIT™ test was administered by a registered psychometrist and the researcher was not involved in the process.

Source: Adapted from Johnson and Onwuegbuzie (2004, p. 21)

Based on these strengths, a mixed methods research approach was deemed to be the best option for obtaining constructive answers to the research questions.

3.4.3 Research process

In considering the type of mixed methods strategy of inquiry for this study, I reflected on four criteria as suggested by Creswell (2003, p. 211):

- the **implementation** sequence of quantitative and qualitative data collection in the study
- the **priority** given to quantitative and qualitative data collection
- the stage in the research project where I wanted to **integrate** the qualitative and quantitative data
- whether to use an overall **theoretical perspective** for the study

The decisions made pertaining to the selection of a mixed methods strategy of inquiry for this study are illustrated and marked in yellow in the matrix in table 3.3, sourced from Creswell (2003, p. 211).

Table 3.3 Matrix illustrating decision choices for determining a mixed methods strategy of inquiry

Implementation	Priority	Integration	Theoretical perspective
No sequence Concurrent	Equal	At data collection	Explicit
Sequential – qualitative first	Qualitative	At data analysis	
Sequential— quantitative first	Quantitative	At data interpretation	Implicit
		With some combination	

Source: Adapted from Creswell (2003, p. 211)

3.4.3.1 Implementation

Implementation pertains to whether the researcher collects the quantitative and qualitative data at the same time (concurrent) or in different phases (sequential) (Creswell, 2003; Johnson & Onwuegbuzie, 2004). In the case of this study, the two types of data were collected independently and concurrently during the 2004 Partners@Work programme.

3.4.3.2 Priority

The priority or weight given to quantitative or qualitative data depends on various factors, for example the interests of the researcher or what the researcher wants to emphasise in the study (Creswell, 2003). In the case of this study, it was decided to emphasise the qualitative data, as the aim was to explore participants' feelings, cognitive thought processes and coping strategies while mastering new educational technologies. Quantitative data, that is, the participants' EI scores, were used to confirm, corroborate and cross-validate research findings from the qualitative data analysis (Creswell, 2003; Johnson & Onwuegbuzie, 2004).

3.4.3.3 Integration

Quantitative and qualitative data can be integrated at various stages of the research process. In this study, the qualitative findings pertaining to the document analysis of data and consisting of reflective diary entries, prompted essays and written summaries answered the first and second sub-questions. The quantitative findings consisted of a

presentation of the participants' EI scores. In order to answer the third sub-question and, consequently, the main research question, the qualitative and quantitative data were integrated during the interpretation phase of the study.

3.4.3.4 Theoretical perspective

The last criterion to consider was the theoretical perspective that guided the research design. The conceptual framework, as discussed and illustrated in chapter 2 of this report, guided the study explicitly. According to Creswell, this framework “operate[s] regardless of the implementation, priority, and integrative features of the strategy of inquiry” (Creswell, 2003, p. 213).

3.4.3.5 Visual model of research strategy

Johnson and Onwuegbuzie (2004, p. 22) illustrate nine different mixed methods research strategies for integrating data using a design matrix.

Note: “qual” signifies qualitative, “quan” signifies quantitative, “+” signifies concurrent, “→” signifies sequential, capital letters indicate high priority or weight, and lower case letters indicate lower priority or weight (Johnson & Onwuegbuzie, 2004, p. 22). Figure 3.2 presents the matrix, mapping this study on the matrix in yellow.

		Time Order Decision	
		Concurrent	Sequential
Paradigm Emphasis Decision	Equal status	QUAL + QUAN	QUAL → QUAN QUAN → QUAL
	Dominant status	QUAL + quan	QUAL → quan qual → QUAN QUAN → qual Quan → QUAL

Figure 3.2 Mixed methods research design matrix

Source: Adapted from Johnson and Onwuegbuzie (2004, p. 22)

In this study a concurrent strategy was followed, as I attempted to “confirm, cross-validate and corroborate” the qualitative findings (demonstrated EI skills of participants) with the quantitative findings (theoretical EI skills of participants) (Creswell, 2003, p. 216). This formed a small part of the study, as for the greater part of the study a concurrent crystallisation approach was used because the mixed methods research strategy comprises a QUAL + quan design, focusing on the interpretation of the participants’ multiple constructed realities.⁹

Multiple constructed realities can be studied holistically within the interpretive domain (Lincoln & Guba, 1985, p. 35). To utilise these multiple realities, data were gathered from multiple sources using both quantitative and qualitative methods. Richardson (2000, p. 934) puts forward the idea that “crystallization is a better lens through which to view” the components of qualitative research, therefore different data collection methods for crystallisation will enhance the trustworthiness of the study. According to Richardson (2000, p. 934), the crystal “combines symmetry and substance with an infinitive variety of shapes, substances, transmutations, multidimensionalities, and angles of approach. Crystals grow, change, and alter, but are not amorphous”. Janesick (2000, p. 392) expands this analogy, explaining that the substance of what you see when viewing a crystal depends on the way you view it by holding it up to the light or not. Richardson (2000, p. 934) continues by explaining, that “crystallization provides us with a deepened, complex, thoroughly partial, understanding of the topic”.

This study comprises what Tashakkori and Teddlie (2003a, p. 686) describe as a “multistrand concurrent mixed methods design”. According to these authors, in this type of study “one kind of question is simultaneously addressed by collecting and analyzing both QUAL and QUAN data, and then one type of inference is made on the basis of both data sources (2003a, p. 686). The QUAL+quan mixed methods research design of this study consists of two strands of data collection and analysis procedures. Figure 3.3 presents a visual model of the research strategy, depicting the qualitative strand as darker to show the priority of qualitative methods in the mixed methods research design.

⁹ The inferences phase focuses on the multiple constructed realities of participants in terms of coping strategies used.

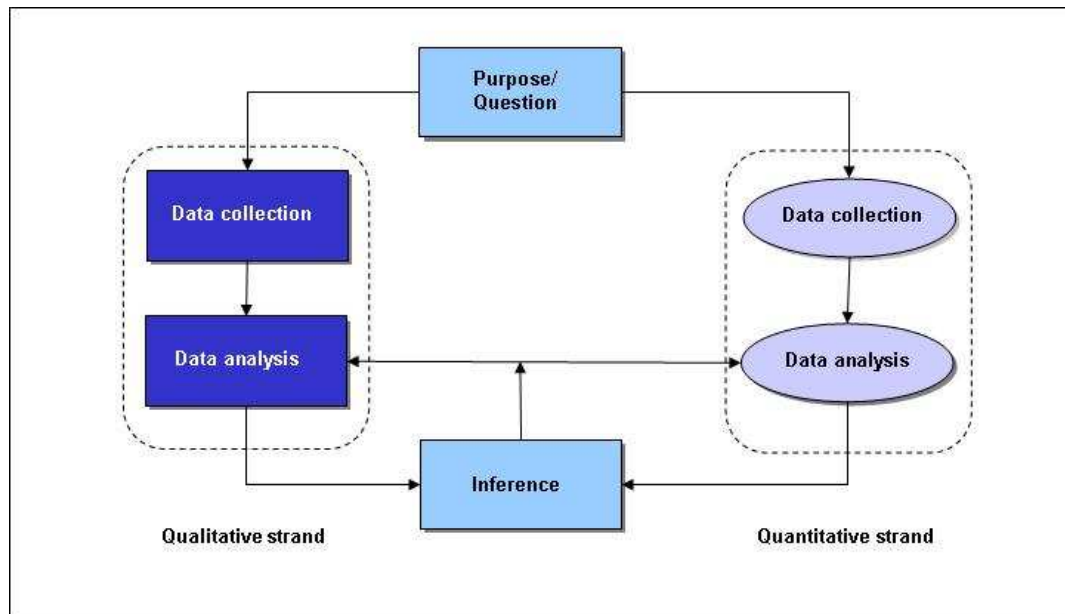


Figure 3.3 Multistrand concurrent mixed methods design

Source: Adapted from Tashakkori and Teddlie (2003a, p. 688)

The different data types enabled inferences to be drawn of the link between emotional intelligence and the ability to cope with mastering new educational technologies.

3.4.4 Philosophical underpinning

A persistent concern in mixed methods research pertains to “the manner in which paradigms are used in the development of the field” (Teddlie & Tashakkori, 2007, p. 17). Teddlie and Tashakkori list and discuss six different positions on this issue:

- *The a-paradigmatic stance*
Some researchers view the epistemology–methods link as “distracting or unnecessary and simply ignore it” (2007, p. 18), and continue to use any method appropriate for answering the research questions.
- *The incompatibility thesis*
Some researchers are in agreement with the incompatibility thesis, believing that mixed methods research is destined to fail (Teddlie & Tashakkori, 2007, p. 19).

- *The complementary strengths thesis*

A number of researchers believe that mixed methods are viable, but that the methods “must be kept as separate as possible so that the strengths of each paradigmatic position can be realised” (Teddlie & Tashakkori, 2007, p. 19). These authors state that reading *The handbook of mixed methods in social and behavioural research* (Tashakkori & Teddlie, 2007) reveals that most of the authors in the book are comfortable with mixing methods, and are generally “not very concerned with the purity of the underlying paradigms being maintained” (Teddlie & Tashakkori, 2007, p. 20).
- *The single paradigm thesis*

Some researchers hold the opinion that a single paradigm should provide the foundation for mixed methods research. Teddlie and Tashakkori (2007, pp. 20-22) name two distinct philosophical positions in this regard:

 - pragmatism as the foundation for mixed methods research
 - the transformative-emancipatory paradigm as the foundation of mixed methods research
- *The dialectic thesis*

Believers in a “dialectic” stance, who do not advocate one specific paradigm above another, take the view that “all paradigms have something to offer and that the use of multiple paradigms contributes to greater understanding of the phenomenon under study” (Teddlie & Tashakkori, 2007, p. 22). It is important to note here “the ability to think dialectically”, examining the tensions arising from diverse perspectives (Teddlie & Tashakkori, 2007, p. 22).
- *The multiple paradigm thesis*

Some researchers deem the multiple paradigm thesis applicable to mixed methods research, where multiple paradigms may provide the foundation for research. The difference between the dialectic stance and the multiple stance is that multiple stance researchers are of the view that only one paradigm is best for a particular study, whereas researchers advocating the dialectic stance reject selecting one paradigm over another (Teddlie & Tashakkori, 2007, p. 23).

In this study, I made use of various paradigms. Pragmatism served as the foundation of the study, but I adopted an interpretivist approach in studying the participants’

experiences, emotions and coping strategies, and a constructivist grounded theory approach during analysis and interpretation of the data.

As “pragmatism presents a very practical and applied research philosophy” (Teddlie & Tashakkori, 2003, p. 21) I have followed their suggestion: “Study what interests and is of value to you, study it in the different ways that you deem appropriate, and utilize the results in ways that can bring about positive consequences within your value system.”

Several authors have suggested pragmatism as the philosophical partner for mixed methods research (Creswell, 2007; Johnson & Onwuegbuzie, 2004; Teddlie & Tashakkori, 2007). Creswell (2007, p. 18) maintains that within the mixed methods approach, the researcher “base[s] knowledge claims on pragmatic grounds (e.g., consequence-oriented, problem-centered, and pluralistic”. According to Creswell (2003, p. 12) “pragmatism provides a basis for the following knowledge claims”. I have adapted Creswell’s description of mixed methods research knowledge claims based on pragmatism to this study.

- *Pragmatism is not committed to any one system of philosophy and reality.*
As a mixed methods researcher, I was able to draw from both quantitative and qualitative assumptions in my study (Creswell, 2003).
- *Individual researchers have a freedom of choice.*
Within mixed methods research I chose “methods, techniques and procedures of research” that best suited the needs and purpose of this study (Creswell, 2003, p. 12).
- *Pragmatists do not see the world as an absolute unity.*
As a mixed methods researcher I applied different approaches to collecting and analysing data (Creswell, 2003).
- *Truth is what works at the time; it is not based in a strict dualism between a mind and a reality completely independent of the mind.*
I made use of both qualitative and quantitative data in an effort to provide the best understanding of the research problem (Creswell, 2003).
- *Pragmatist researchers look to the “what” and the “how” of research based on its intended consequences – where they want to go with it.*

I had to ascertain the purpose of using both qualitative and quantitative data using the rationale that multiple data types would assist me in exploring and describing linkages between emotional intelligence and the ability to cope with mastering new educational technologies

Research approaches are characterised by a specific ontology, epistemology and methodology (Terre Blanche & Durrheim, 2002) (see figure 3.1). By working within an interpretivist paradigm, I assumed that the participants' subjective experiences while coping with mastering new educational technologies are real (ontology), and that I could gain an understanding of their experiences by listening to their stories (epistemology) (Terre Blanche & Durrheim, 2002).

Schwandt (2000, p. 191) asserts that from an interpretivist approach meaning is socially constructed by human actors and that researchers need to "understand the meanings that constitute that action". The core assumption underlying an interpretivist approach is that, in order to understand an action, part or phenomenon, the researcher needs to examine the whole phenomenon in context in order not to miss important aspects (Schwandt, 2000). Relying on the first-hand accounts of participants, I endeavoured to describe their experiences in rich detail following the model of *verstehen* and taking into account the context of the Partners@Work programme. In my role as instructional designer facilitating participants in the programme, I had an understanding of what was expected of them, as well as the pressures and challenges they experienced (Terre Blanche & Durrheim, 2002).

I adopted Charmaz's (2000) constructivist grounded theory during analysis and interpretation. This type of approach was well suited to the analysis and interpretation of data in this study, because, as an instructional designer in the Partners@Work programme, I had a close relationship with the participants, which was essential for eliciting "their stories in their terms" (Charmaz, 2000, p. 525) from the participants. In keeping with a constructivist grounded theory approach, "at conceptual level of coding, writing memo's and developing categories", I aimed "to understand the assumptions underlying the data by piecing them together" (Charmaz, 2000, p. 525). Charmaz (2000, p. 529) maintains that "through sharing the worlds of our subjects, we come to conjure an image of their constructions and our own".

3.5 Data collection

3.5.1 Selection of participants

A purposeful sampling involved ten participants in the Partners@ Work programme initiated by the Department of Telematic Education at the Tshwane University of Technology in June 2004. The criterion for the selection of these participants was the completion of all three of the documents produced during the first six months of the programme. As stated in chapter 1 §1.8, a limitation of the study is that the analysis of the data started after the conclusion of the 2004 Partners@Work programme and I was advised not to use interviews with participants, as too much time had elapsed. I therefore focused on the documents created during the programme, forming a rich set of data. The documents used in the qualitative analysis, will be discussed in detail in §3.5.2.2. As I promised anonymity to the participants, reference to gender, age, etc. may identify them and I therefore did not incorporate any detail pertaining to the participants in this section.

3.5.2 Data collection methods

Various authors have commented on the importance of keeping in mind *the fundamental principle of mixed methods research* when conducting mixed methods research (Johnson & Turner, 2003; Johnson & Onwuegbuzie, 2004; Tashakkori & Teddlie, 2003b). Johnson and Turner (2003, p. 299) state that, in terms of data collection methods, the combination of methods should have different strengths, and be combined in such a way that the researcher is enabled to “provide convergent and divergent evidence about the phenomenon being studied” (Johnson & Turner, 2003, p. 299). Using both qualitative and quantitative methods enhanced the rigor of this study by providing “stronger evidence for a conclusion through convergence and corroboration of findings” (Johnson & Onwuegbuzie, 2004, p. 21).

Table 3.4 provides a matrix of data collection methods giving an overview of how data collection was used in an effort to answer the research questions.

Table 3.4 Matrix of data collection methods

Sub-questions	Data sources			
	Prompted essays	Reflective diaries	Summaries	MISCEIT
What strategies do participants with diverse emotional intelligence profiles implement to master new educational technologies?	✓	✓	✓	
What are the cognitive thought processes and emotions experienced by the participants while using diverse coping strategies?	✓	✓	✓	
What are the trends regarding linkages between emotional intelligence and coping strategies used by participants?				✓

Qualitative

Quantitative

Themes and categories were derived from analysis of data. These themes and categories were analysed to elicit main trends and compared with EI scores as measured by the MSCEIT to search for links between EI and coping strategies.

As stated in chapter 1, the inclusion of interviews and observational data, would have enhanced the rigor of the study.

In the next two sections, the data collection methods, how the data were documented, and how the data were used to answer the research questions are explained.

3.5.2.1 Quantitative methods

The quantitative method used in this study, the EI ability test, the Mayer–Salovey–Caruso–Emotional–Intelligence–Test™ (MSCEIT™), “provided precise, quantitative, numerical data” (Johnson & Onwuegbuzie, 2004, p. 19).

As part of the Partners@Work programme the emotional intelligence of the participants was measured by the new ability test of EI, the Mayer–Salovey–Caruso Emotional Intelligence Test™ (MSCEIT™). MSCEIT™ measures the four branches, or skill groups, of EI: (a) perceiving emotion accurately, (b) using emotion to facilitate thought, (c) understanding emotion, and (d) managing emotion (Mayer, Salovey, Caruso, &

Sitarenios, 2003). The reason for choosing the MSCEIT™ is that, according to Mayer *et al.* (2000c, p. 416), current research proposes that the ability model of EI “can be described as a standard intelligence and empirically meet the criteria for a standard intelligence”.

Initial EI ability scales (Mayer, DiPaolo, & Salovey, 1990) were criticised in terms of possessing lower-than-desirable reliability (Roberts, Zeidner, & Matthews, 2001; Zeidner, Matthews, & Roberts, 2001). Evidence is accumulating that EI is a distinct ability that can be reliably measured (Brackett, Mayer, & Warner, 2004; Mayer, Caruso, & Salovey, 2000). In a recent study, Mayer *et al.* (2003) reported that the MSCEIT™ achieved sound reliability and that those using the MSCEIT™ as a measure of EI can be confident about the quality of the MSCEIT™ as a measuring tool for EI.

The MSCEIT™ yields a total emotional intelligence score as well as two area scores (Experiential and Strategic Emotional Intelligence). The four branch scores are for Perceiving Emotion, Facilitating Thought, Understanding Emotion and Managing Emotion. Finally scores for eight individual tasks are reported (Mayer *et al.*, 2003). Figure 3.4 provides an overall view of the MSCEIT V2.0 scores.

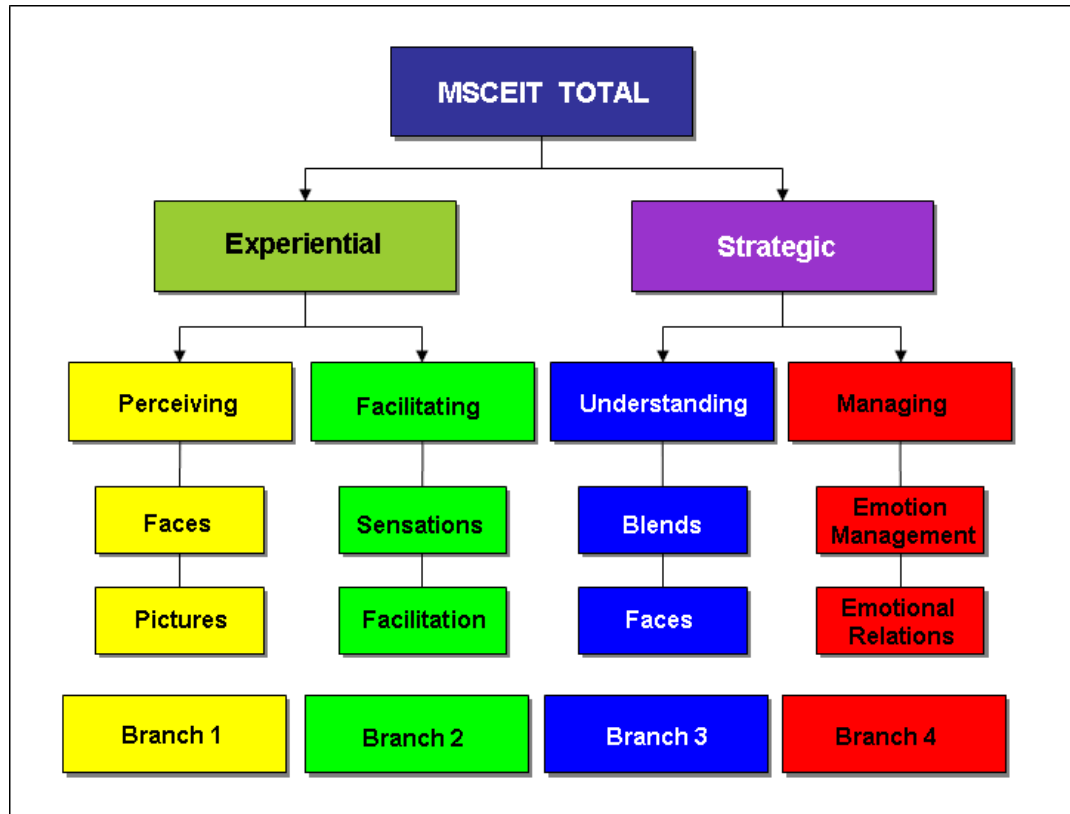


Figure 3.4 MSCEIT V2.0

The different branches in figures 3.4 and 3.5 refer to the branches in the model of emotional intelligence of Mayer and Salovey (1997) as discussed in chapter 2, § 2.3.

Table 3.5 gives a description of how the different tasks are measured as described by Mayer, Salovey and Caruso (2004b).

Table 3.5 Descriptions of tasks measured by MSCEIT V2.0

Branch	Description
1	<i>Perceiving Emotions, is measured by (a) Faces, for which participants are asked to identify the emotions in faces and (b) Pictures, for which participants are asked to identify the emotions conveyed by landscapes and designs.</i>
2	<i>Using Emotions to Facilitate Thought, is measured by (c) Sensations, for which participants compare emotions to other tactile and sensory stimuli and (d) Facilitation, for which participants identify the emotions that would best facilitate a type of thinking (e.g. planning a birthday party).</i>
3	<i>Understanding Emotions, is measured through (e) Changes, which tests a person's ability to know under what circumstances emotional intensity lessens and increases and how one emotional state changes into another (e.g., frustration into aggression and (f) Blends, which asks participants to identify the emotions that are involved in more complex affective states.</i>
4	<i>Managing Emotions, is measured through (g) Emotion Management, which involves presenting participants with hypothetical scenarios and asking how they would maintain or change their feelings and (h) Emotion Relationships, which involves asking participants how to manage others' feelings so that a desired outcome is achieved.</i>

Source: Adapted from Mayer, Salovey & Caruso (2004b, p. 200)

As quantitative data (EI scores of participants) was needed to corroborate the findings obtained using qualitative methods, permission was obtained from the participants to use their EI scores. A registered psychometrist administered the test and the test was scored electronically. The scores were obtained from the psychometrist with the participants' permission and the scores documented in table 4.65. See §4.4.4.

3.5.2.2 Qualitative methods

As it was necessary to explore “multiple and conflicting voices, differing and interacting interpretations “ (Hodder, 2000, p. 705) for crystallisation purposes, the study of material in the form of documents was of vital importance. The documents used for analysis are the materials or documents generated by the participants during the first six months of the programme Partners@Work:

- reflective diaries (using Blogger – an online electronic diary);
- essays with prompts;
- summaries written by participants at the end of the programme.

The programme consisted of an online component and weekly face-to-face meetings. The participants made use of Blogger as an online electronic diary to reflect on the face-to-face activities. As this was the first group of lecturers attending the

Partners@Work programme, the instructional designers used these reflections to evaluate the different sessions with the intention of improving the programme where necessary. The participants were asked to reflect on each session in terms of the following questions:

- What did you enjoy/find useful in the session?
- What did you not enjoy/find useful in the session?
- What would you like to change about the session and how would you change it?

The instructional designers obtained the reflections from Blogger via RSSfeed. Figure 3.5 gives a typical example of such an RSSfeed.¹⁰ This example is taken from the 2005 Partners@Work group, as an undertaking was made with the participants in this study to maintain their anonymity.

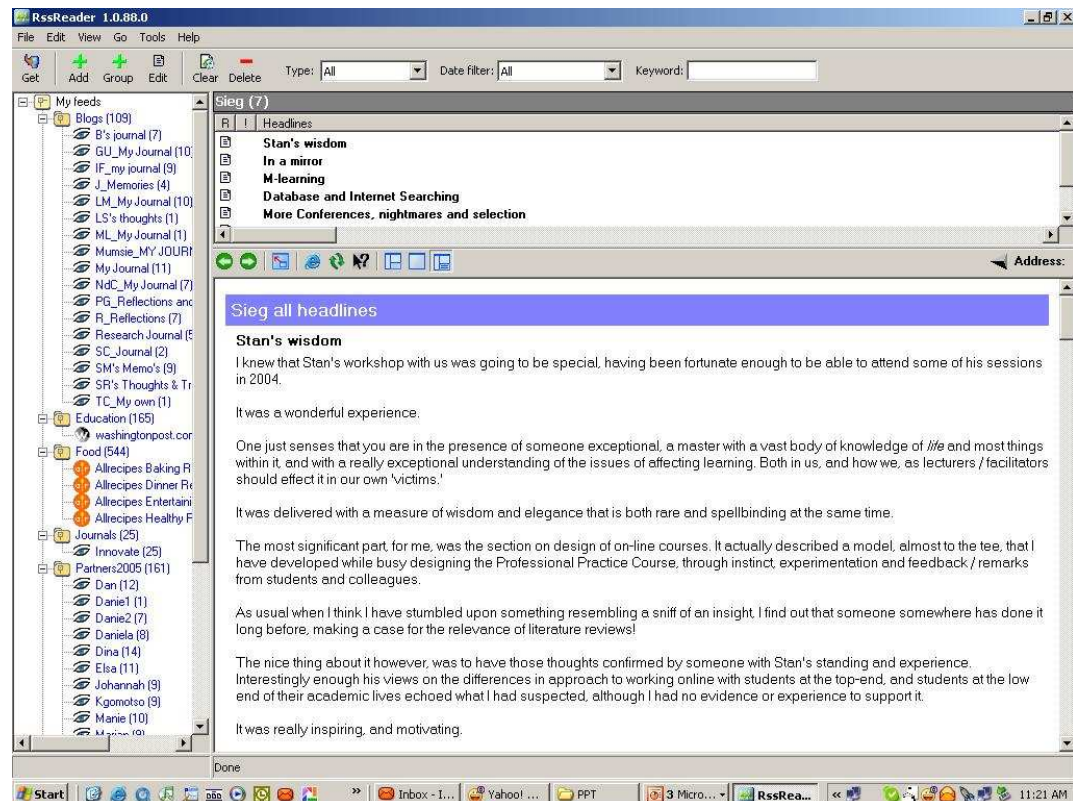


Figure 3.5 Example of RSSfeed with reflections from Blogger

¹⁰ With permission of the author

The reflections of the participants were collated in a document separately for analysis by participant, as different instructional designers were using the data for their studies.

During the course of the programme, participants were asked to write a prompted essay using the following prompts:

Write descriptive notes reflecting on all the technologies by answering the questions listed below.

Technologies:

- WebCT
- Perception
- Respondus
- Camtasia
- Video
- Video Conferencing
- Corel Draw
- Front Page
- Blogger
- Yahoo Messenger

Questions:

- How did you experience the mastering of the listed technologies in the Partners@Work programme? (Emotions and feelings)
- What strategies did you implement/employ to master the technologies listed?
- How do you perceive your ability to cope with the technologies listed?
- If you did not master or use some of the listed technologies, state the reasons why not.

At the end of the six-month period, the participants wrote summaries, reflecting on and describing the course materials they had developed.

The criterion for selection of the participants was the completion of all three of the above-mentioned documents. Only 10 of the participants completed all three of the different documents, making up the purposeful sample.

On entering the programme, participants gave permission for the instructional designers to use these materials in their studies and in articles written for publications.

3.6 Data analysis

The mixed methods research process model of Johnson and Onwuegbuzie (2004, p. 23) that was adapted for use in this study incorporates Onwuegbuzie and Teddlie's seven-stage model of the mixed methods data analysis process (2007, p. 375). In this model, data analysis consists of seven stages: (1) data reduction, (2) data display, (3) data transformation, (4) data correlation, (5) data consolidation, (6) data comparison, and (7) data integration. Because of the nature of this study, the data were not correlated or consolidated. Figure 3.6 presents a visual representation of the mixed methods data analysis process adapted from Onwuegbuzie and Teddlie's seven-stage model of the mixed methods data analysis process for this study (2007, p. 374).

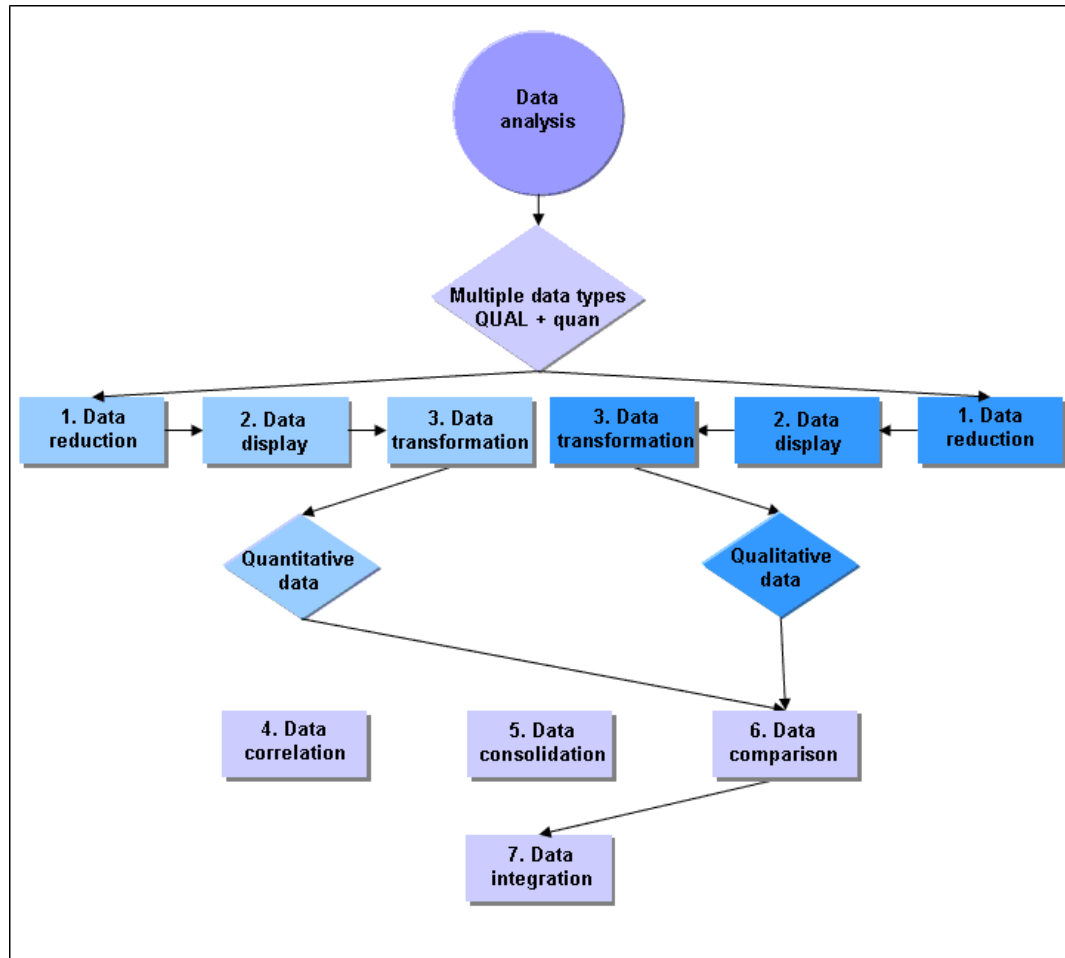


Figure 3.6 Mixed methods analysis process

Source: Adapted from Onwuegbuzie and Teddlie (2007, p. 374)

Onwuegbuzie and Teddlie note that although the stages may seem sequential, they are not linear (2007, p. 373).

3.6.1 Data reduction

The first stage in the analysis process involves the reduction of the collected data. Data reduction “refers to the process of selecting, focusing, simplifying, abstracting, and transforming the data” the researcher gathers (Miles & Huberman, 1994, p. 10).

3.6.1.1 Quantitative data reduction

The quantitative data consists of the EI scores of the participants, collected from the psychometrist in a reduced format, consisting of the total score, area scores and

branch scores for each participant. The data were received in a reduced format. See table 4.65 §4.4.4.

3.6.1.2 Qualitative data reduction

With data analysis and interpretation, as a researcher I have positioned myself as the participants' partner in accordance with constructivist grounded theory as described by Charmaz (2000, pp. 509-535). Mills *et al.* (2006, p. 9) point out the following requirements in a constructivist approach:

The creation of a sense of reciprocity between participants and the researcher in the coconstruction of meaning and, ultimately a theory that is grounded in the participants' and researcher's experiences.

The establishment of relationships with participants that explicate power imbalances and attempts to modify these imbalances.

Clarification of the position the author takes in the text, the relevance of biography and how one renders participants' stories into writing.

In reducing and preparing the qualitative data, I made use of Atlas.ti™,¹¹ a computer software application. Atlas.ti™ enabled me to scrutinise the documents with "great depth, thoroughness and precision" (Pomerantz, 2004, p. 182). The qualitative data consisted of the entries of each participant in the electronic reflective diary, as well as an essay with prompts and a summary written by each participants. For each participant, I collated these three documents into a single document, forming a "heuristic unit" for coding in Atlas.ti™. Therefore, there were ten heuristic units in Atlas.ti™ for coding.

In coding and analysing the data, the techniques used combined both inductive and deductive methods (Almarza, 1996; Boyatzis, 1998; Fereday & Muir-Cochrane, 2006). The data were coded in terms of the different participants, their coping strategies (using deductive and inductive technique), their reasoning, and their perceived ability to master a technology. The process followed during data coding and analysis is summarised in table 3.6.

¹¹ I trained with Woolf Consulting, Carpinteria, California in the use of Atlas.ti™.

Table 3.6 Summary of process followed for data coding and analysis

Step	Action	Outcome
1	Survey of coping strategy inventories	Use of the CCSC & HICUPS scale as a priori codes
2	Inductive coding approach, coding from the data	Data analysis in Atlas.ti™
3	Validation of codes	Validated codes
4	Summarising coping strategies using the Cooccurrence explorer in Atlas.ti™	Tables with summaries of coping strategies of each participant
5	Use of Atlas.ti to create super codes	Codes of major themes in the reasoning codes
6	Use of the Query tool in Atlas.ti™ to generate reports for the co-occurrence of each coping strategy with the different reasoning super codes for each participant	Tables with quotations for each participant on the reasoning of the participant explaining the use of different coping strategies Answer sub-question1
7	Analysis of tables with quotations for each participant on the reasoning of the participant explaining the use of different coping strategies	Three distinct groupings among the participants revealed: Theme 1: Participants using positive and no negative coping strategies Theme 2: Participants using both positive and negative coping strategies Theme 3: Participants using negative and no positive coping strategies Answer sub-question2
8	Generated frequency tables of coping strategies in Atlas.ti™	Table 5.1 with frequency of coping strategies used by participants.
9	Analysis of the three themes and the summarised frequency table	Five main trends emerged: <ul style="list-style-type: none"> • Perceiving ability as adequate • Use of cognitive decision-making as a coping strategy • Perceiving the situation as stressful • Emotional disclosure • Social networking
10	Combining the trends, making comparisons with factors pertaining to resiliency and emotional intelligence, comparing trends with EI scores	Finding linkages between EI and coping strategies Answer sub-question 3 and the main research question of this study

Step 1: A priori codes

A survey of coping strategy inventories was carried out in an attempt to find the most suitable coping strategy inventory for this study. A table summarising the survey of inventories with accompanying scales is available in appendix K.

After studying the various inventories and coping scales, it was decided to use the Children's coping strategies checklist & How I coped under pressure scale (CCSC & HICUPS) scale, because this particular inventory illustrates and describes an extensive range of coping strategies enabling the researcher to interpret the narratives of the participants accordingly. Although the CCSC & HICUPS scale is normally used as a questionnaire for children, the well-defined structure suited this study (and the researcher as a novice in the field), explaining the coping strategies and enabling the ongoing comparison of the narratives with the explanation of coping strategies. While working with the data I realised that the use of humour was lacking in this particular classification of coping strategies and the scale was adjusted accordingly as shown in table 3.7 and highlighted in yellow*.



Table 3.7 Coping strategies according to the adapted CCSC & HICUPS scale

Active coping strategies	Problem focused coping	Cognitive decision making (CDM)	Planning or thinking about ways to solve the problem (e.g. think about which things are best to do to handle the problem)
		Direct problem solving (DPS)	Efforts to improve the problem situation (e.g. do something to make things better)
		Seeking understanding (SU)	Efforts to find meaning in a problem situation or try to understand it better (e.g. try to understand it better by thinking more about it)
	Positive cognitive restructuring	Positivity (POS)	Thinking about the good. Things that happened (e.g. try to notice or think about only the good things in your life)
		Control (CON)	Thinking that you can handle or deal with whatever happens (e.g. tell yourself that you can handle this problem)
		Optimism (OPT)	Thinking about things in the future in an optimistic manner (e.g. tell yourself that things will get better)
		Use humour*	Use humour*
Distraction strategies	Distracting actions (DA)		Efforts to avoid thinking about the problem situation by using distracting stimuli, entertainment or some distracting activity (e.g. you did something like video games or a hobby)
	Physical release of emotions (PRE)		Efforts to physically work off feelings with a physical exercise, play or efforts to physically relax (e.g. you played a sport)
Avoidance strategies	Avoidant actions (AVA)		Efforts to avoid the problem by staying away from it or leaving it (e.g. stay away from things that make you feel upset)
	Repression (REP)		Repressing thoughts of the problem (e.g. try to put it out of your mind)
	Wishful thinking (WISH)		Using wishful thinking or imaging the problem were better (e.g. wish that things were better)
Support seeking strategies	Support for actions (SUPA)		The use of other people as resources to assist in seeking solutions to the problem situation. This includes seeking advice or information or direct task assistance (e.g. you talked to someone who could help you figure out what to do)
	Support for feeling (SUPF)		The involvement of other people listening to feelings or providing understanding to help the person be less upset (e.g. you talked about your feelings to someone who really understood)

Source: Adapted from Ayers et al., 1996

This framework provided the a priori codes for the deductive part of the coding. From the a priori codes I proceeded to code inductively from the data. The description of each coping strategy provided in this scale assisted me to code the data. I constantly reviewed and compared the data with descriptions of a particular coping strategy.

Step 2: Coding from the data

I followed an inductive coding approach, coding from the data the way in which the participants made use of the different coping strategies. With the use of “action codes” I attempted to keep the coding close to the experiences of the participants to enable me to create an analysis evocative of the participants’ lived experience (Charmaz, 2000, p. 515; Mills *et al.*, 2006, p. 12). Using action codes, I analysed the data using a comparative technique in line with constructivist grounded theory as advocated by Charmaz (2000, p. 515). Accordingly, I made the following comparisons while coding and writing memos:

- of the views, situations, actions, accounts and experiences of the participants;
- of data from the same participant at different points in time;
- between different incidents;
- of data and category;
- between different categories (Charmaz, 2000, p. 515).

Figure 3.7, a network created in Atlas.ti™, illustrates the use of a priori coping strategies of *Problem focused* coping strategies and the resulting inductive coping strategies that emerged from the data.

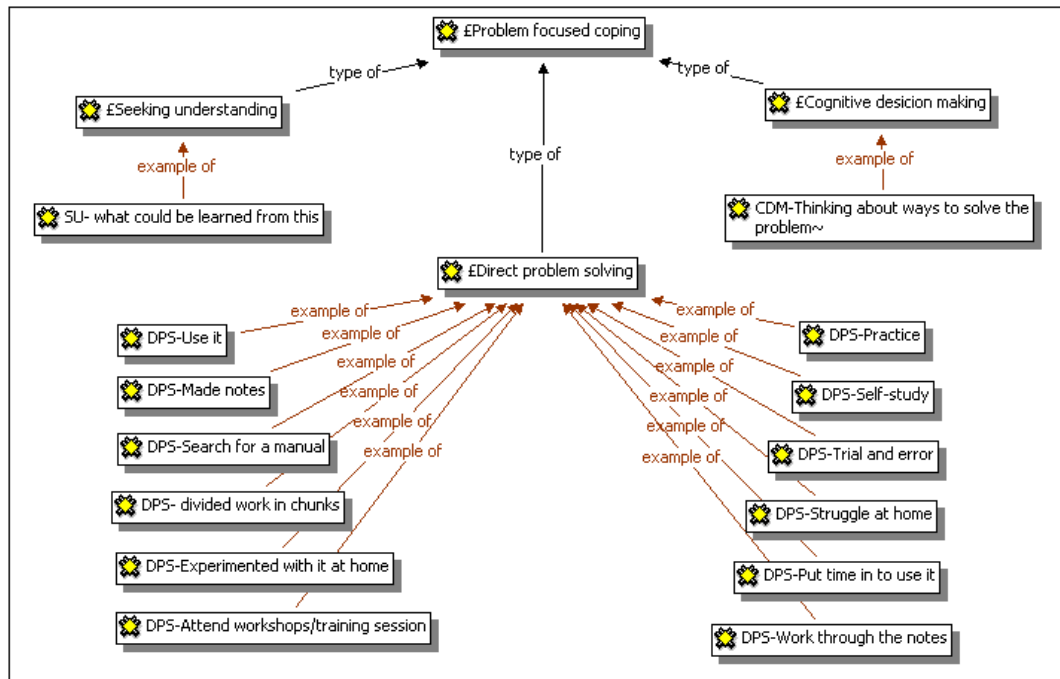


Figure 3.7 Example of a priori and inductive coding

The analysis of the data proceeded in a cyclical manner, as I returned to the data constantly in order to extract the essence of the participants' experience.

Step 3: Validation

A limitation of my study is the fact that I was the sole coder. In order to validate the coding, I printed the coding in Atlas.ti™ and validated the codes with both my supervisors, Professors Knoetze and Ebersöhn. Memo writing of intricate instances added to the rigor of my study.

Step 4: Summarising coping strategies using the Cooccurrence explorer in Atlas.ti™

In order to answer the first sub-question, I generated a summary of the coping strategies used by each participant using the Cooccurrence Explorer in Atlas.ti™. In order to present these coping strategies in an illustrative manner, I created tables for each participant. Table 3.8 exemplifies the coping strategies used by a participant with the participant's coping strategies highlighted in yellow.

Table 3.8 Example of coping strategies used by a participant

Possible strategies		Strategies used	
Active coping strategies	Problem-focused coping	Cognitive decision making (CDM)	CDM – Thinking about ways to solve the problem
		Direct problem solving (DPS)	DPS – Use it
		Seeking understanding (SU)	SU –What could be learned from this?
	Positive cognitive restructuring	Positivity (POS)	POS –Will use it in future POS – Mention the positive
		Control (CON)	
		Optimism (OPT)	OPT – Things will work out OPT – Will be able to do it/use it
		Use humour	Use humour
Distraction strategies	Distracting actions (DA)		
	Physical release of emotions (PRE)		
Avoidance strategies	Avoidant actions (AVA)		
	Repression (REP)		
	Wishful thinking (WISH)		
Support seeking strategies	Support for actions (SUPA)		
	Support for feeling (SUPF)		

This table allowed me to distinguish between the coping strategies used and not used at a glance. In order to answer the first sub-question, the coping strategies of the participants were summarised and presented in a table to give a holistic overview (as presented in chapter 4, § 4.2, table 4.1).

Step 5: Creating super codes

The next step in the analysis process was the creation of super codes of major themes in the reasoning codes of the participants, for example Enjoyable, Made suggestion, Positive perception, Negative perception, User friendly, Blaming, Not used, Unsure.

Step 6: Generating reports using the Query tool in Atlas.ti™

Using the Query tool in Atlas.ti™, reports were generated for each participant for the co-occurrence of each coping strategy with the different reasoning super codes. Tables

were created containing quotations for each participant that demonstrated their reasoning and explained the use of the different coping strategies. Table 3.9 presents an example of coping strategies, reasoning and quotations for a specific participant.

Table 3.9 Example of coping strategy, reasoning and quotations

Coping strategy	Reasoning	Quotation	Number
DPS- Use it	Blaming	Blogger: <i>I like the idea of blogging and did not have problems mastering it. The Blogger website, however, I did not like. I do not think to implement it somewhere in future – will use the survey-tool in WebCT for this purpose rather.</i>	#1
	Made suggestion	<i>During the past few weeks I have mostly completed all subject material, as well as the WebCT course for DBR for next year. I also had to do many feedbacks and discussions at our faculty regarding Partners and everything we did. I am mostly satisfied with the subject material, but have a huge problem in the sense that I have not really received any true criticism, feedback or whatever you would like to call it.</i>	#2
	Perception positive	Camtasia: <i>What an excellent little application for use in ICT! I found it easy to master and have used it for a few movie clips - will definitely use it for many more typical student problems.</i>	#3
		<i>What and enjoyable day!! To the telematic team: I do enjoy this process immensely!! The way in which we did the ADDIE model introduction made a lot of sense, because we this is something that you can do via internet searches and it also gave us lots of practise in many other things (teamwork/ppt/present etc.) The blueprint seems to be lots of work, as I expected from the discussions on the design phase. It helps to talk to various people about what you want to do, and I am sure that the next workshops will also help us in this process.</i>	#4
		WebCT: <i>Nice hands-on session! At last we are creating our courses!</i>	#5
		Respondus: <i>Respondus was easy to master and to use. I have used it for all my web tests with success</i>	#6
		WebCT: <i>The mastering process was handled very good by ... (&kie) and I enjoyed working (and still enjoy working) in WebCT. Personally I liked the pace, but I can understand that less computer literate people may have problems coping. I am trying to implement as many of WebCT's elements as possible in my course - almost all aspects are working fairly well at this stage - maybe it is a bit early in the semester to truly comment on this.</i>	#7

Step 7: Analysis of coping strategies

The quotations in the tables generated in step 6 were numbered, for example #1, #2 and so on.

When answering sub-question 2, three distinct themes emerged from the analysis of tables of participants' quotations showing the participant's reasoning and explaining the use of different coping strategies:

Theme 1: Participants using positive and no negative coping strategies

Theme 2: Participants using both positive and negative coping strategies

Theme 3: Participants using negative and no positive coping strategies

These themes are discussed in chapter 4.

Step 8: Generating frequency tables of coping strategies

Subsequently frequency tables of coping strategies were generated in Atlas.ti™ and the different frequency tables were summarised as presented in chapter 5, table 5.1.

Step 9: Analysis of three themes and the summarised frequency of coping strategies

From the analysis of the three themes and the summarised frequency table, five main trends emerged:

- Perceiving ability as adequate
- Use of cognitive decision making as a coping strategy
- Perceiving the situation as stressful
- Emotional disclosure
- Social networking

I discuss these trends in chapter 5.

Step 10: Comparing trends with EI scores

In combining these trends, comparisons were made with factors pertaining to resiliency and emotional intelligence in an effort to find linkages between EI and coping strategies – answering sub-question 3 and the research question of this study in chapter 5.

The process of reducing the data “sharpens, sorts, focuses, discards and organizes the data in such a way that ‘final’ conclusions can be drawn and verified” (Miles & Huberman, 1994, p. 11).

3.6.2 Data display

Onwuegbuzie and Johnson (2007) cite Miles and Huberman (1994, p. 11) stating that the data display stage reduces the data to “gestalts or easily understood configurations”. The data were displayed in the form of tables and diagrams in order to present the data in a “compact form so that the analyst can see what is happening and either draw justified conclusions or move on to the next step of analysis the display suggests may be useful” (Miles & Huberman, 1994, p. 11).

3.6.3 Data transformation

In mixed methods research data, transformation consists of two sub processes, namely qualitised data and quantitised data (Teddlie & Tashakkori, 2007, p. 9). Qualitised data are described as “[c]ollected quantitative data types [that] are converted into narratives that can be analyzed qualitatively” (Teddlie & Tashakkori, 2007, p. 9); while quantitised data are defined as “[c]ollected qualitative data types [that] are converted into numerical codes that can be statistically analyzed” (Teddlie & Tashakkori, 2007, p. 9).

In this study the EI scores of the participants were qualitised into different qualitative values according to the user guide. This helped in interpreting and seeking patterns in participants’ EI scores (see chapter 4, §4.4).

Using Atlas.ti™, frequency tables were generated of the different coping strategies employed by the participants. In this instance, qualitative data (coping strategies) was quantitised into numbers, assisting in the interpretation of results (see chapter 5, §5.2).

In the earlier stages of the analysis process, these frequency tables generated in Atlas.ti™ were used to search for patterns.

3.6.4 Data comparison

The theoretical EI abilities of the participants were compared with their demonstrated EI abilities, as reflected in the data analysis.

3.6.5 Data integration

The quantitative and qualitative data collected were presented separately, but in analysing and interpreting the data, the data were integrated to answer the main research question.

3.7 Inference

Inference, meaning the interpretation of results, “making sense of the findings” and drawing conclusions, may be viewed as the most important part of a study (Tashakkori & Teddlie, 2003a, p. 691). Tashakkori and Teddlie (2003a, p. 691) point out that inferences are not only answers to the research questions in the study, but may provide the basis for the development of new comprehensions of a phenomenon. In this study, interference pertains to my engagement with the data, exploring the participants’ thought processes and feelings, while coping with the mastering of new educational technologies in order to answer the research questions. Various strategies were employed to ensure high-quality inferences and different data sources provided different angles from which to view the data (Richardson, 2000). Peer debriefing in discussion with my supervisors and co-instructional designers was used to reach consensus on an interpretation of the findings. During the analysis, I kept looking for negative cases and I left an audit trail consisting of analysis notes, data reduction and analysis products, data reconstruction and synthesis products (Tashakkori & Teddlie, 2003a). In reporting the research findings, I endeavoured to describe the trends in a rich, descriptive way.

3.8 Role as researcher

Patton describes “going into the field” as having direct and personal contact with the participants in the study in the environment being studied (2002, p. 48). As an instructional designer, I was closely involved with the participants as a facilitator in the Partners@Work programme. Patton describes empathy as “being able to take and understand the stance, position, feelings, experiences and worldviews of others” (2002, p. 52). Being an “insider” in the programme enabled me to reach some level of understanding (*verstehen*) of the way participants interacted with the educational technologies and to have empathy in the sense of understanding their feelings and experiences while mastering the new educational technologies (Patton, 2002). I was

thus able to interpret the data in the particular context. In order to ensure credibility, I employed multiple strategies, as discussed in §3.10.

I was “the primary instrument for both collecting and analysing the data” (Terre Blanche & Kelly, 2002, p. 126). As this demanded a “total involvement and commitment in a way that requires total immersion of the senses in the experience” (Janesick, 1998, p. 61), I expressed my beliefs and assumptions beforehand.

3.9 Trustworthiness strategies

The basic issue in relation to trustworthiness is simple: How can an inquirer persuade his or her audiences (including self) that the findings of an inquiry are worth paying attention to, worth taking account of? What arguments can be mounted, what criteria invoked, what questions asked, that would be persuasive on this issue? (Lincoln & Guba, 1985, p. 290).

As I adopted an interpretivist approach to interpreting the data, the criteria for establishing trustworthiness consist of credibility, transferability, dependability and confirmability.

3.9.1 Credibility

Seale (2000, pp. 44-45) maintains that “credibility is built up” through “prolonged engagement in the field”, “exposure of the research report to criticism by a disinterested peer reviewer and a search for negative instances that challenge emerging hypotheses”. In order to increase the probability of credible findings, I invested some time in building up trust and rapport with the participants. I also took the time to learn how to test for misinterpretation in my own responses as well as those of the participants (Lincoln & Guba, 1985, p. 301).

I also made use of different data sources for verification. Using peer debriefing, I exposed myself to searching questions of colleagues in the Department of Telematic Education in order to clarify bases for interpretations. While analysing the data, I made use of the Atlas.ti™ memo facility, recording the more challenging instances.

3.9.2 Transferability

I endeavoured to describe the participants' experiences, cognitive thought processes, emotions and coping strategies in a rich, descriptive and detailed manner in order that other researchers might use them as a source of comparison. I made this effort particularly so that, in the words of Seale, "readers are given sufficient information to be able to judge the applicability of findings to other settings which they know" (2000, p. 45).

3.9.3 Dependability

In order to establish dependability, I left an audit trail of the data documentation and the methods used to analyse the data. I reflected with peers (colleagues in the Department of Telematic Education) on the procedures followed in order to "provide a critique of the processes used and a check on their clarity and consistency" (Seale, 2000, p. 141). In consulting my supervisors, I followed a process that Seale (2000, p. 142) calls "methodological consultancy", negotiating and agreeing on the adequacy of the processes followed in coding, analysing and interpreting the data.

3.9.4 Confirmability

To establish confirmability I based the conclusions drawn in the study on the data gathered and provided an audit trail consisting of raw data, analysis notes, data reduction and analysis products, data reconstruction and synthesis products (Seale, 2000, p. 45). During the study, I reflected self-critically on discussions with my supervisors and co-instructional designers, comparing findings from the different data sources (Seale, 2000, p. 45). I reflected on the limitations of the study as discussed and presented in chapter 6 (Lincoln & Guba, 1985, p. 319).

3.10 Ethical considerations

In this study, I abided by the ethical guidelines as proposed by Durrheim and Wassenaar (2002, pp. 66-70) to "protect the welfare and the rights of research participants". These authors suggest three principles on which ethical guidelines are based, namely autonomy, nonmaleficence and beneficence (Durrheim & Wassenaar, 2002, p. 66).

3.10.1 Autonomy

This principle necessitates the researcher to respect the autonomy of the research participants (Durrheim & Wassenaar, 2002). In this respect, I provided participants with a full, non-technical, clear explanation of what was expected of them so that they could make an informed decision to participate voluntarily in the research. The participants were free to withdraw from the research at any time. I also informed them of the confidentiality of the information supplied by them and only made use of the information and data that were central to the study. The research proposal was presented to the Ethics Committees of both the Tshwane University of Technology and the University of Pretoria. The raw data containing participants' personal details will be securely stored and destroyed once the data have been analysed. The results of the study will be published with attention to the rights of participants. I took care to protect the identity of individuals, as I guaranteed anonymity in the consent document. The consent document is available in appendix L.

3.10.2 Nonmaleficence

In considering this principle of no harm to participants, I informed the participants beforehand of the nature of the research and took great care to ensure anonymity. All references to people, departments and courses were removed from the data. During the administration of the emotional intelligence test, MSCEIT™, the test administrator assured the participants that their EI scores would be treated with confidentiality.

3.10.3 Beneficence

The principle of beneficence “requires the researcher to design research such that it will be of benefit” (Durrheim & Wassenaar, 2002, p. 66). The participants did not benefit directly from this research in that they received no form of compensation. The benefits of this research might be the provision of guidelines for facilitators for optimising training in blended learning courses.

3.11 Summary

This chapter presented the research strategy followed in answering the research questions. I discussed the research methodology, which consists of a mixed methods approach within a case study design. A description of the data collection, followed by the data analysis and the data interpretation, was given. I clarified my role as researcher, explained the strategies followed to ensure trustworthiness and concluded with the ethical considerations pertaining to this study.

In the next chapter, I present the interpretation of the results of the study.

Chapter 4: Interpretation of results

Coping with the demands of everyday life would be exceedingly trying if one could arrive at solutions to problems only by actually performing possible options and suffering the consequences.

(Bandura, 1997)

4.1 Introduction

In the previous chapter the methodological strategies related to this research were discussed and defended. The outcomes of the analysis process are documented and are available in the appendices A-J.

This chapter aims to answer the following two research questions:

- What strategies do participants with diverse emotional intelligence profiles implement in order to master new educational technologies?
- What were the cognitive thought processes and emotions experienced by the participants while using diverse coping strategies?

The first part of the chapter presents a summary of the coping strategies used by the participants, while in the next section three themes related to coping on the part of the participants are presented. These three themes are:

- **Theme 1:** Participants use positive and no negative coping strategies, pp 130–153
- **Theme 2:** Participants use both positive and negative coping strategies, pp 154–168
- **Theme 3:** Participants use negative and no positive coping strategies, pp 169–179

This section is followed by a discussion of the EI scores of the participants. The chapter concludes with a presentation in three groupings of the EI scores in terms of the Emotional Coping Hierarchy according to Salovey *et al.* (1999). These three groupings are as follows:

- **Group 1**, participants 2, 3, 4, 6 and 8, pp 185–189
- **Group 2**, participants 5 and 9, pp 189–190
- **Group 3**, participants 1, 7 and 10, pp 191–194

Figure 4.1 presents an overview of chapter 4.

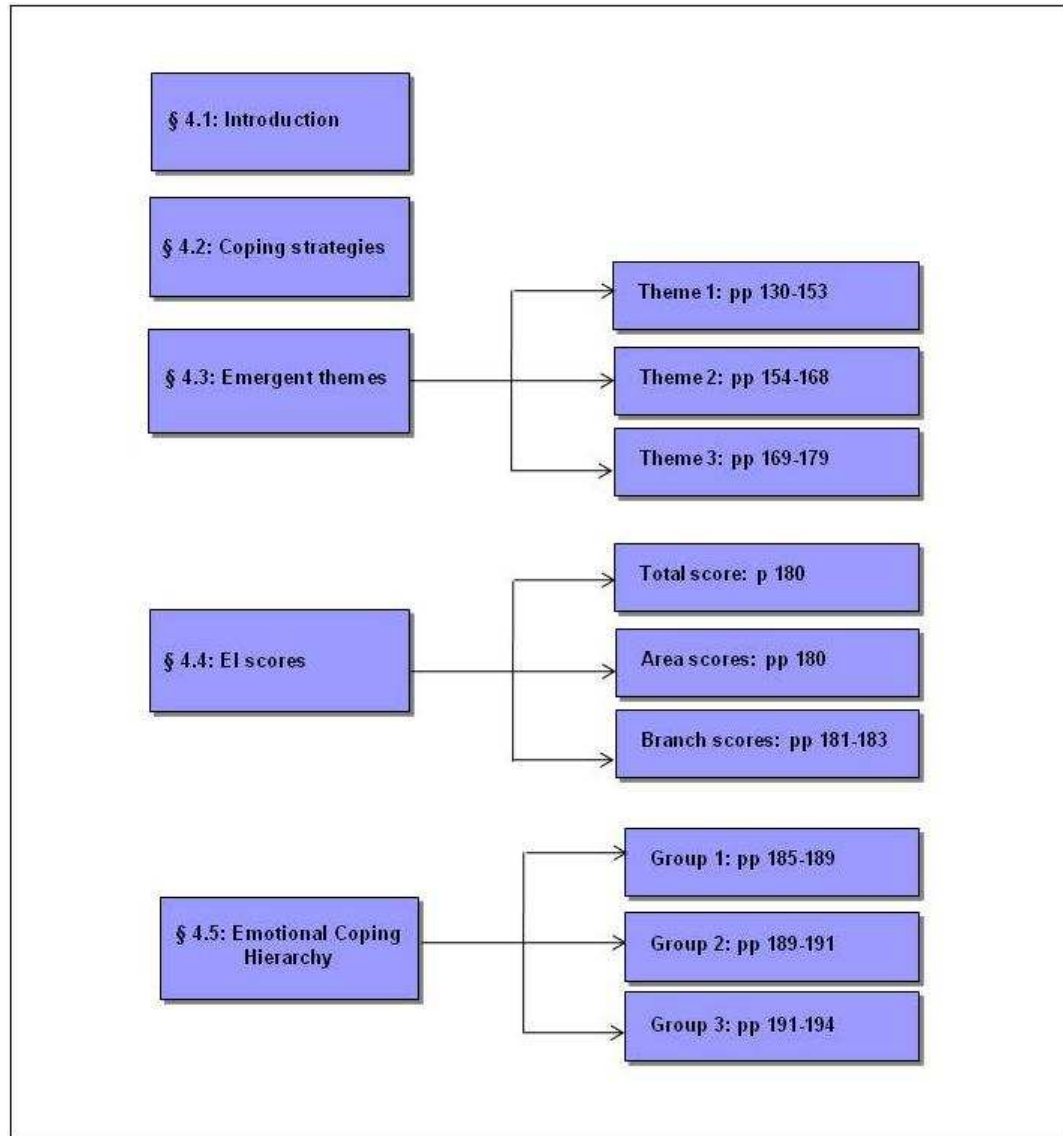


Figure 4.1 Overview of chapter 4

The next section deals with the coping strategies used by the participants.

4.2 Coping strategies used by participants

This section aims to answer the following sub-question:

What strategies do participants with diverse emotional intelligence profiles implement to master new educational technologies?

A summary of the diverse coping strategies used by each participant is available in appendices A–J. Table 4.1 summarises the coping strategies as used by all the participants.

Table 4.1 Summary of coping strategies of participants

Possible strategies			Strategies used by participants										
			1	2	3	4	5	6	7	8	9	10	
Active coping strategies	Problem-focused coping	Cognitive decision-making (CDM)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		Direct problem solving (DPS)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		Seeking understanding (SU)		✓		✓				✓			
	Positive cognitive restructuring	Positivity (POS)		✓	✓	✓	✓	✓		✓			
		Control (CON)			✓		✓						
		Optimism (OPT)		✓	✓	✓		✓		✓	✓		
		Humour		✓						✓			
Distraction strategies	Distracting actions (DA)	✓											
	Physical release of emotions (PRE)												
Avoidance strategies	Avoidant actions (AVA)	✓				✓		✓		✓	✓	✓	
	Repression (REP)	✓											
	Wishful thinking (WISH)												
Support-seeking strategies	Support for actions (SUPA)	✓	✓	✓	✓	✓	✓		✓	✓			
	Support for feeling (SUPF)												

The table illustrates the following results:

Active coping strategies:

- All the participants used problem-focused coping strategies in the form of cognitive decision-making and direct problem solving.

- Participants 2, 4 and 8 used the problem-focused coping strategy of seeking understanding.
- In terms of positive cognitive restructuring the following may be observed:
 - Participants 2, 3, 4, 5, 6 and 8 made use of positivity in order to cope.
 - Participants 1, 7, 9 and 10 did not use positivity.
 - Control was used by participants 3 and 5.
 - Optimism was used by participants 2, 3, 4, 6, 8 and 9.
 - Participants 2 and 8 made use of humour as a coping strategy.

Distraction strategies:

- Participant 1 used distraction actions.

Avoidance strategies:

- Avoidance actions were used by participants 1, 5, 7, 9 and 10.
- Participant 1 made use of repression as a coping strategy.

Support-seeking strategies:

- Participants 7 and 10 did not mention the use of support-seeking strategies.

Note: The instructional designers gave support to all participants as part of the programme. During show-and-tell sessions peer support was highly evident. A limitation of the research is that it is biased towards verbal and narrative accounts, as less verbal participants did not blog as much as the more verbal participants.

Summary of the results from table 4.1:

- All participants used direct problem solving and cognitive decision-making.
- Participants 1, 7 and 10 display similar profiles in the sense that they all used avoidance strategies, but no positive cognitive reconstruction strategies. A limitation in this case is that participants 7 and 10 were nonverbal and made use of the blogger to a limited extent, in contrast with the rich and vocal data of participant 1.
- Participants 5 and 9 made use of positive cognitive reconstruction strategies, as well as avoidance strategies.
- Participants 2, 3, 4, 6 and 8 used similar strategies in the sense that they all used positive cognitive strategies, but no avoidance strategies. Only participants 2 and 8 made use of humour as a coping strategy.

4.3 Emergent themes

The previous section explicated the results emerging from the analysis of the coping strategies used by the participants. An analysis of the data revealed three distinct groupings among participants:

Theme 1: Participants using positive and no negative coping strategies

Theme 2: Participants using both positive and negative coping strategies

Theme 3: Participants using negative and no positive coping strategies

Table 4.2 presents the inclusion and exclusion criteria applicable to the different themes.

Table 4.2 Inclusion and exclusion criteria for the different themes

Theme	Inclusion criteria	Exclusion criteria
1	Use of positive coping strategies	No use of negative coping strategies
2	Use of both positive and negative coping strategies	Use of positive coping strategies only Use of negative coping strategies only
3	Use of negative coping strategies	No use of positive coping strategies

Figure 4.2 provides a representation of the themes associated with the grouping of participants.

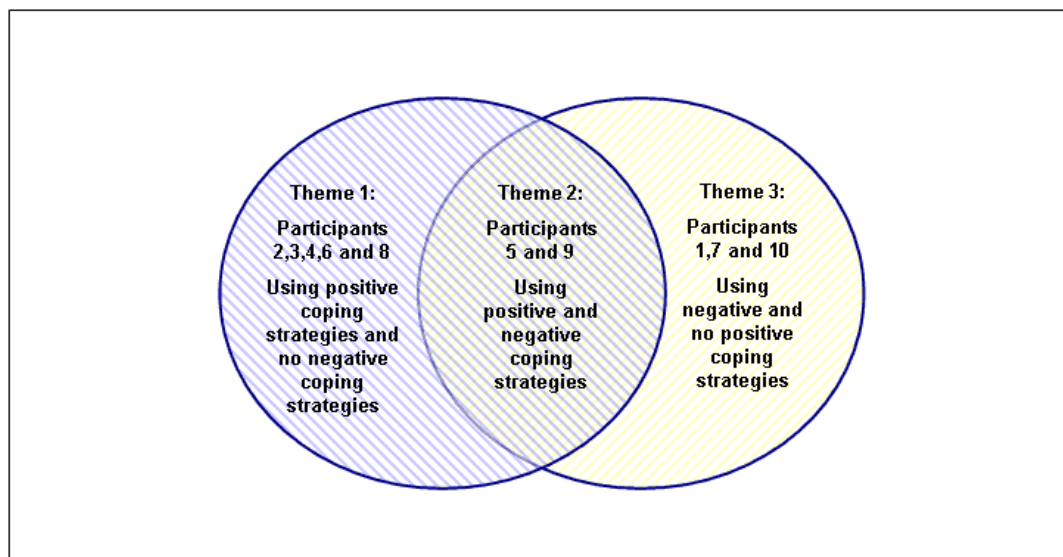


Figure 4.2 Themes associated with the grouping of participants

This section illustrates the emotions experienced by and the thought processes of the participants in each grouping, and provides an answer to the second sub-question:

What were the cognitive thought processes and emotions experienced by the participants while using diverse coping strategies?

In an attempt to tell the story using the actual voices of the participants, there are frequent quotations from the narratives of the participants. In other words exemplary quotes are used to illustrate observations.

4.3.1 Theme 1: Using positive and no negative coping strategies

Theme 1 exemplifies the reasoning, feelings and emotions on the part of this grouping of participants while they were coping with mastering new educational technologies. The grouping consists of participants 2, 3, 4, 6 and 8. The detailed sets of data of their narratives are available for perusal in appendices B, C, D, F and H. Figure 4.2 summarises the sub-themes and categories within Theme 1.

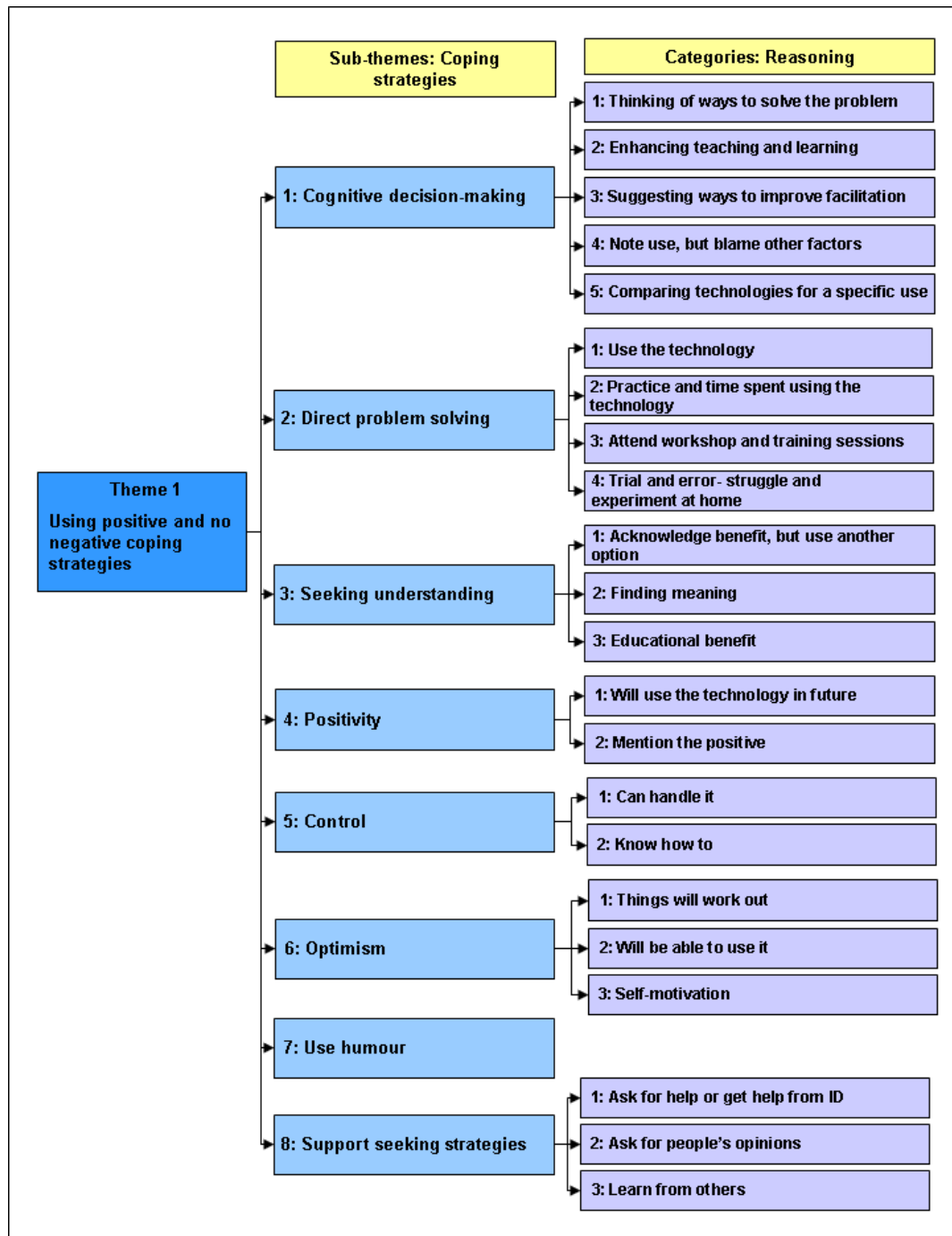


Figure 4.3 Summary of sub-themes and categories within theme 1

Within theme 1, the group of participants made use of a wide range of coping strategies: cognitive decision-making, direct problem solving, seeking understanding, positivity, control, optimism, use of humour and support-seeking strategies. An essential factor for inclusion in this group was the absence of avoidance strategies. In this group of participants the use of problem-focused coping strategies centred on

feelings of self-efficacy, although some of the participants made use of these coping strategies to voice suggestions on ways to improve the programme. The next section presents the reasoning of participants around the use of cognitive decision-making as a coping strategy.

4.3.1.1 Sub-theme 1: Cognitive decision-making

With the use of cognitive decision-making as a coping strategy, participants illustrated their reasoning as regards ways to solve a problem when confronted with the mastering of a new technology.

4.3.1.1.1 Category 1: Thinking of alternative ways to solve the problem

One of the ways of using cognitive decision-making as a coping strategy was formulating an alternate way to solve the problem should the participants encounter difficulties with a specific technology. Table 4.3 presents examples of the actual words used by the participants about alternative ways of solving a problem.

Table 4.3 Thinking of alternative ways to solve a problem

Theme	Sub-theme	Category	Quotation
1	Cognitive decision-making	Thinking of alternative ways to solve a problem	<p>P2: <i>I did not have problems in mastering FrontPage, but many problems with the program (software) itself, and therefore did not incorporate it in my course (Used Powerpoint instead) I will definitely use it in future, because I think it is a powerful application! (Table B.2#1).</i></p> <p>P4: <i>Blogger: It seems that I am very unfortunate in trying to block [sic]. The past three times I was thrown off the network time and again – I now rather try to write my blog in Word and copy and paste it (Table D.2 #1).</i></p>

Participants 2 and 4 were not prepared to be defeated by the problem and showed evidence of creative thinking. Of particular significance is the positive way in which the participants addressed the problem. Participant 2 experienced problems with the software but, as an alternative to blaming the software itself, the participant made use of another option to complete the learning materials for the course, while at the same time remaining positive and optimistic about the use of FrontPage in the future. In a similar way, because of a very slow internet connection, participant 4 experienced problems uploading reflections to Blogger. However, participant 4 remained positive,

did the reflection in Word and copied and pasted it in the reflective journal on the internet. Could there be a link with emotional intelligence?

4.3.1.1.2 Category 2: Enhancing teaching and learning

The linking of the use of the technology to their own field as an enhancement of the teaching and learning process was another way participants coped by using cognitive decision-making. Table 4.4 presents quotes from participants relating to cognitive decision-making in terms of enhancing teaching and learning.

Table 4.4 Enhancing teaching and learning

Theme	Sub-theme	Category	Quotation
1	Cognitive decision-making	Enhancing teaching and learning	P2: <i>Camtasia: What an excellent little application for use in ...! I found it easy to master and have used it for a few movie clips – will definitely use it for many more typical student problems (Table B.2#14).</i>
			P2: <i>The possibilities of WebCT as test organizer is amazing! I can see many self-tests, pre-tests, surveys etc. being done here for my course as well. I still cannot see that I will use it to replace the two main semester tests because of its limitations, but maybe I just do not know enough about this tool yet (Table B.2#17).</i>
			P3: <i>I enjoyed the presentations on ADDIE's Analysis component, as well as the hands-on session on E-Portfolios. It helped me a lot to focus my plans for ...s telematic programme, as I realised that I have been thinking too wide and too vaguely about it. In the coming days and weeks I want to narrow my plans a lot more and that is where the Needs Analysis Assignment will help a lot. Each time that we look at a new component of WebCT I am more impressed and excited about its possibilities for my telematic an-programme (Table C.2.#12).</i>
			P3: <i>WebCT: The various sessions throughout the programme enabled me to gradually gain a grip on all the relevant parts and to use it in my programme development. The big emphasis on this technology was a strong point as it formed the backbone of my programme development and presentation. (Table C.2.#5).</i>
			P3: <i>WebCT: On-line courses have so much more to offer my students in terms of resources, assessments and support than I was ever aware of. (Table C.2.#7).</i>
			P3: <i>WebCT: Excited about professional growth. Excited about personal growth. Excited to take what I learn back to my department and faculty to help, support and motivate them to also take up the telematic challenge. (Table C.2.#8).</i>

Participant 2 showed evidence of meta-cognitive thinking by linking the application of Camtasia to the solving of typical student problems in the specific field of study. The cognitive thinking process on the part of participant 2 is illustrated by musings on the possibilities of WebCT as a test organiser. Of significance is the positive way in which the limitations of WebCT are mentioned and reasoned about. Participant 3 reflects in a very positive way on the benefits gained from the presentations, as well as the exciting possibilities in terms of the development of learning materials. Participant 3 shares ambiguous feelings of simultaneous excitement and fear, but at the same time views the learning curve positively as a challenge for personal and professional growth. Participant 3 reflects on being empowered to support and motivate department and faculty members in turn.

What is significant in the reasoning of these participants is the positive way of thinking about ways in which the use of specific technologies may benefit the development of teaching and learning materials for their courses and the ability to express their feelings and share emotions.

4.3.1.1.3 Category 3: Suggesting ways to improve facilitation of the programme

In the process of mastering the different technologies, participants identified factors that could improve the facilitation. The suggestions made on ways to improve the facilitation process when introducing new educational technologies signified cognitive thinking on ways to solve problems. Table 4.5 presents quotes from participants relating to suggestions on ways to improve the facilitation of new technologies.

Table 4.5 Suggesting ways to improve facilitation of the programme

Theme	Sub-theme	Category	Quotation
1	Cognitive decision-making	Suggesting ways to improve facilitation	<i>P2: Very interesting information –it helps to understand the important facts to remember when creating not only video clips, but any type of graphics. It may be a good idea to have this session again later during the course, after we have worked with graphics more, and more people will understand the basic ideas behind it (Table B.2.#4).</i>

Table 4.5 Suggesting ways to improve facilitation (cont.)

Theme	Sub-theme	Category	Quotation
1	Cognitive decision-making	Suggesting ways to improve facilitation	P6: <i>I appreciateds session to find out how we experienced the e-moderating, and some concerns were expressed. I think we are just under a lot of pressure now. A suggestion: maybe next year's group should have two days a week for the first few weeks and then, when they have the new technologies mastered, only once a week. We had a rather slow start and now we are speeding out of control! (Table F.2.#1)</i>
			P6: <i>The WebCT re-cap was necessary as I realised that I forgot many important things! I still feel that most of the time I am behind and I am now sure that I am a very slow learner. Some people just get the whole idea with half a word! I am not one of those and will just have to work harder. Even though the course interface is very simple at this time, it is great to know that I did it. I would like some more sessions on graphics and scanning just to be more sure of myself (Table F.2.#7).</i>
			P8: <i>The blogging is starting to feel like a useless exercise, which, of course, it is not. Maybe ... should give regular feedback on the group's experience. I feel as if our comments are being ignored because we don't get feedback (Table H.2.#5).</i>

Participant 2 commented positively on the importance and relevance of the information regarding video clips, but was of the opinion that this information should be presented later in the course when it would be more relevant – a valid argument. It is worth noting how, by pointing out how advantageous it is to have completed the course interface of the learning programme in WebCT, participant 6 deals in a positive way with negative feelings. Although the participant feels uncertain, there is positive reasoning that more sessions are needed.

Participant 8 voiced the need for feedback on the reflections of the partners in Blogger. Even though being discouraged by the lack of feedback. This participant continued blogging and reflecting, although the participant was discouraged by the lack of feedback.

An observation concerning the positive manner in which participants convey their thoughts about ways to improve the programme demonstrates the positive way this grouping, in contrast to the negative way of participants in the other groups, deals with these issues. Could this be evidence of a link with emotional intelligence?

4.3.1.1.4 Category 4: Note use, but blame other things

In certain instances the usefulness of a technology was noted, but something else was blamed for the inability to cope adequately with the technology. Table 4.6 presents quotes from the participants pertaining to the usefulness of a technology and to factors interfering with the mastering of the technology.

Table 4.6 Note use, but blame other things

Theme	Sub-theme	Category	Quotation
1	Cognitive decision-making	Note use, but blame other things	<p>P4: Perception: <i>Also the perception program seems to be a very powerful system, but it is unfortunate that we did not have enough time to practise in class due to the test that needed to be written in the IC (Table D.2.#2).</i></p> <p>P2: <i>I still have reservations about Perception – it seems to be a bit complicated, again only for shorter question types – I see there is an essay option as well and will look into it, to see how it can help me to mark programming.(Table B.2.#19).</i></p>

Participant 4 commented on Perception as a powerful program, but stated it was unfortunate that there was not sufficient time to practise. Participant 2 reflected that Perception was a complicated program to use, but noted that the essay option might be of help with the marking of programming. Even though the participants experienced difficulties mastering the technology, the overall mood evident in their reflections was positive.

4.3.1.1.5 Category 5: Comparing technologies for a specific use

In this instance, different technologies were compared in terms of usability, thus demonstrating higher order cognitive skills. Table 4.7 presents quotes relating to the comparison of different technologies for a specific application.

Table 4.7 Comparing technologies for a specific use

Theme	Sub-theme	Category	Quotation
1	Cognitive decision-making	Comparing technologies for a specific use	<p>P8: <i>The producing of a professional video makes Camtasia redundant. I believe that very few of the Partners, for understandable reasons, can appreciate the power of an effective training video. This technology, when done professionally, can encapsulate most of the other technologies. The only drawback is the expense involved in producing the video (Table H.2.#14).</i></p> <p>P8: <i>With regards to [Perception]: This is the 3rd programme that may be used to design assessments. In a situation where I am experiencing information overload I would prefer the designers to choose the best programme for us and then stick to that one only. Why do we need to know how to drive a car, bicycle and tractor when you need to go from point a to b? (Table H.2.#6).</i></p>

Participant 8 voiced a valid argument about the use of three different software programs for e-testing, when one program would have been sufficient.

The extensive use of cognitive decision-making as a coping strategy is evident in the narratives of the participants. The reasoning ranged from thinking of alternate ways to solve problems creatively when mastering a technology to expressing ideas on ways in which the instructional designers could enhance the facilitation process. The next section deals with the reasoning of the participants from the grouping in Theme 1 on *direct problem solving*.

4.3.1.2 Sub-theme 2: Direct problem solving

It would appear that participants made use of direct problem solving in times of perceived self-efficacy, when they felt confident about their ability to use and apply the particular technology.

4.3.1.2.1 Category 1: Use the technology

When participants experienced the technology as user friendly, they voiced their delight at using it. Table 4.8 presents quotes on the usefulness of specific technologies.

Table 4.8 Use the technology

Theme	Sub-theme	Category	Quotation
2	Direct problem solving	Use the technology	P2: <i>Respondus was easy to master and to use. I have used it for all my web tests with success (Table B.3.#6).</i>
			P2: <i>Respondus has got my vote –I created a nice activity, making use of Respondus for the self tests, as well as a short formal assessment (Table B.3.#9).</i>
			P8: <i>Respondus is user friendly and most of the Partners reacted positively to its capabilities. It was enlightening that multiple-choice, which may be regarded by some as a “monkey-puzzle” with little educational value, turned out to be quite the opposite. I believe that this programme has the ability to accurately test the students’ knowledge.(Table H.9.#7)</i>
			P2: <i>Yahoo Messenger: An excellent way to keep in contact with people! Mastering easy! (Table B.10.#4).</i>

From their narratives it would appear that, if the participants perceived a particular technology as user friendly, they enjoyed it and used it extensively. Participants often mentioned Yahoo and Respondus in this connection.

Table 4.8 Use the technology (cont.)

Theme	Sub-theme	Category	Quotation
2	Direct problem solving	Use the technology	P6: <i>Blogger: I had no idea that something like this even existed and had to be very disciplined to keep it updated. This was the first thing I did after getting home from our work sessions as the information was still fresh in my mind. It was nice to be able to record some of the joys as well as the frustrations and sometimes the words just poured out of me. Other times I was more reserved with not that much to say (Table F.3.#13).</i>
			P8: <i>The Blogger Programme is more useful to those who peruse its content than to those who create the content. Not getting feedback regarding all the effort by so many people that is put into the Blogging creates a feeling that the input has no outcome. But this is obviously only psychological. (Table H.3.#2).</i>

Table 4.8 Use the technology (cont.)

Theme	Sub-theme	Category	Quotation
2	Direct problem solving	Use the technology	<p>P2: WebCT: <i>The mastering process was handled very good by ... (&kie) and I enjoyed working (and still enjoy working) in WebCT. Personally I liked the pace, but I can understand that less computer literate people may have problems coping.</i></p> <p><i>I am trying to implement as many of WebCT's elements as possible in my course - almost all aspects are working fairly well at this stage – maybe it is a bit early in the semester to truly comment on this (Table B.3.#7).</i></p>

Participant 6 commented on the use of Blogger as a reflection journal, and recorded the frustrations and joys of the program. Participant 8 reflected on the apparent use of blogging, but noted the adverse effect of the lack of feedback. In comments on the facilitation of WebCT, participant 2 mentioned the very important fact that less computer-literate participants may have problems mastering WebCT due to too rapid a pace. This could, other than emotional intelligence, be an important factor influencing coping with the mastering of new technologies.

The observation that once a technology is perceived to be user friendly no problems are experienced in mastering the technology gives rise to a question regarding the impact of this on the facilitation of a technology. What could be done to ensure that participants experience a technology as user friendly?

4.3.1.2.2 Category 2: Practice and time spent using the technology

As with the previous category, the participants had no problem practising and spending extra time in the case of a technology which was perceived as user friendly. Table 4.9 presents the quotes relating to practising and spending time on the use of a technology.

Table 4.9 Practice and time spent using the technology

Theme	Sub-theme	Category	Quotation
2	Direct problem solving	Practice and time spent using the technology	P4: <i>Some was easier than others. I have spent more time on practising those that I found harder and also sought help from my ID and other partners if necessary (Table D.3.#2).</i>
			P3: <i>Camtasia: The training session and applications by other Partners were good fun. The application possibilities are clear, but not really in my field. Strategies to master the technology: Play around a bit with it at home (Table C.3.#3).</i>

Although participant 3 was of the opinion that Camtasia did not have application possibilities in a specific field of study, the participant still mastered it by practising at home. Participant 4 mentions spending more time and obtaining help in order to master the more difficult technologies, thus displaying evidence of resilience.

4.3.1.2.3 Category 3: Attend workshops and training sessions

As attendance at the training sessions was compulsory, not all the participants commented on whether the training sessions were beneficial or not. Table 4.10 presents a quote relating to the training sessions.

Table 4.10 Attend workshops and training sessions

Theme	Sub-theme	Category	Quotation
2	Direct problem solving	Attend workshops and training sessions	P3: <i>FrontPage: ... training session was good. The continuous hands-on use of it throughout the Partners programme (especially the Show-and-Tell sessions) helped a great deal to become more familiar with all its applications (Table C.3.#5).</i>

Participant 3, in noting the preference for hands-on sessions, mentions the positive outcome of training sessions and workshops.

4.3.1.2.4 Category 4: Trial and error – struggle and experiment at home

These quotes tell the story of participants working at home – endeavouring to master the technologies. Quotes pertaining to the efforts of participants in mastering new technologies are included in table 4.11.

Table 4.11 Trial and error – struggle and experiment at home

Theme	Sub-theme	Category	Quotation
2	Direct problem solving	Trial and error – struggle at home	P8: <i>My own blood, sweat, and tears. Struggling the way all computer illiterates struggle when first learning a program. (Table H.3.#1).</i>
			P6: <i>Front page: I enjoyed this program but would have liked more training and time to work with this program before developing my online course as I made several mistakes which I felt could have been prevented by more training. I liked the templates and creative features and had to learn very quickly but find it very useful and would like to use it extensively in future (Table F.3.#8).</i>
			P6: <i>Corel Draw: I was overwhelmed when first experiencing the features of Corel Draw. I did not feel we had enough training and was very unsure when I had to use this on my one. Once again I searched for a manual to explain the different features and had many trials before mastering some of the features. I feel there is a lot I still need to learn which can make life much easier and my courses more interesting (F.3.#11).</i>

Again, what emerge here are suggestions on ways to improve facilitation and needs as seen from the point of view of participants. What is evident from the narratives is a determination to cope, despite feeling unsure and overwhelmed. The question arises again as to whether there is a link with emotional intelligence.

4.3.1.3 Sub-theme 3: Seeking understanding

As regards the coping strategy of *seeking understanding*, participants engaged in efforts to find meaning in the situation or attempted to gain a better understanding of the situation.

4.3.1.3.1 Category 1: Acknowledge benefit, but use another option

Table 4.12 presents a quote on the reasoning that a technology may be beneficial, but that other options could be more relevant.

Table 4.12 Acknowledge benefit, but use another option

Theme	Sub-theme	Category	Quotation
3	Seeking understanding	Acknowledge benefit, but use another option	P2: <i>I like the idea of blogging and did not have problems mastering it. The Blogger website, however, I did not like. I do not think to implement it somewhere in future - will use the survey-tool in WebCT for this purpose rather (Table B.4.#2).</i>

Participant 2 alluded to the benefits of the technology, but mentioned the problems experienced accessing the website, and expressed the possibility of using the technology in another way.

4.3.1.3.2 Category 2: Finding meaning

Table 4.13 contains quotes relating to finding meaning in the context of seeking understanding.

Table 4.13 Finding meaning

Theme	Sub-theme	Category	Quotation
3	Seeking understanding	Finding meaning	P4: <i>The group discussion on needs analysis was useful and insightful, as well as the presentation on the ADDIE (Daisy) model. Throughout the day I enjoyed the activities and group work, learnt a lot and had lots of fun. It was great to have material presented in the correct way! Today also made me realise once again how important it is to bring fun into learning and I will keep that in mind with the designing of my course (Table D.4.#1).</i>
			P2: <i>The way in which we did the ADDIE model introduction made a lot of sense, because we this is something that you can do via internet searches and it also gave us lots of practice in many other things (teamwork/ppt/present etc.) (Table B.4.#5).</i>

Participant 4 commented on the presentation of the lecture, and found meaning by linking it to the design and development of learning materials, and by fun having been

brought into the activity of learning. Participant 2 remarked on the incidental learning of skills while being introduced to another topic.

4.3.1.3.3 Category 3: Educational benefits

Quotes relating to seeking an understanding of the use of technologies pertaining to educational benefits are presented in table 4.14.

Table 4.14 Educational benefits

Theme	Sub-theme	Category	Quotation
3	Seeking understanding	Educational benefit	P8: <i>Respondus is user friendly and most of the Partners reacted positively towards its capabilities. It was enlightening that multiple-choice, which may be regarded by some as a “monkey-puzzle” with little educational value, turned out to be quite the opposite. I believe that this programme has the ability to accurately test the students’ knowledge (Table H.4.#10).</i>
			P8: <i>WebCT: WebCT is the heart of the e-learning system. What started off as a frightening perception regarding this formidable learning programme ended up being a very positive experience. This was due to the realisation that, for a programme to be so effective, it has to have many dimensions, functions, and possibilities. I believe that those institutions who do not buy-in to WebCT or a similar program will, in the future educational environment, be left behind (Table H.4.#7).</i>
			P2: <i>Assessment... I am not good at short questions at all! But, after playing with Respondus for a while, I can see a major advantage of its use for shorter assessments, as well as self-assessments, and I will try to include it in the planned activities for the course. It is still a lot of work to transfer existing questions to it, but I am sure that shortcuts will be developed soon! (Table B.4.#13).</i>

Participant 8 showed insight with reasoning into the functions and possibilities of a learning management system such as WebCT, as well as commenting on the educational value of the software program Respondus. Participant 2 commented on the advantages of using shorter assessments and self-assessments as part of the activities in the course material being developed.

Three participants only used this particular coping strategy, namely, reasoning about the benefits of particular technologies.

The next four sub-themes deal with the use of positive cognitive restructuring coping strategies such as positivity, control, optimism and the use of humour.

4.3.1.4 Sub-theme 4: Positivity

Participants made use of positivity as a coping strategy in an effort to view the situation in a positive light, moving from negative feelings to positive thinking.

4.3.1.4.1 Category 1: Will use the technology in future

Table 4.15 presents quotes regarding the future use of different technologies.

Table 4.15 Will use the technology in future

Theme	Sub-theme	Category	Quotation
4	Positivity	Will use the technology in future	P2: <i>The way in which we did the ADDIE model introduction made a lot of sense, because this is something that you can do via internet searches and it also gave us lots of practice in many other things (teamwork/ppt/present etc.) (Table B.5.#2).</i>
			P2: <i>Camtasia is a really cool tool – Will definitely use it or something similar in future and try to sell it to our faculty!!! (Table B.5.#3).</i>
			P8: <i>I am impressed by the website (Prenhall) because they have my entire prescribed book ... on offer (Table H.5.#1).</i>
			P6: <i>Video: This was also really exciting. At first I was apprehensive to learn about all the terminology as I did not understand the technical mumbo jumbo, but was relieved to hear that I did not have to know about it and that other people would take care of all of that! It was a challenge to write the script for the video and I had to ask several people's opinions as I was very unsure of myself, but received valuable feedback which helped me to improve the script. I felt proud to have my script accepted and would like to use it in future (Table F.4.#1).</i>

Participant 2 expressed enjoyment of the programme and commented positively on the future use of skills and technologies, while participant 8 expressed delight both positively and emphatically with the online data available for use in the development of learning material. Although initially apprehensive, participant 6 persevered and mastered the script writing. Participant 6 expressed positive feelings of empowerment about future use of the technology.

Table 4.15 Will use the technology in future (cont.)

Theme	Sub-theme	Category	Quotation
4	Positivity	Will use it in future	P6: <i>I really enjoyed the hot potatoes as I saw this in another online course and wondered how it was done. I am definitely going to use it. Wimba was also nice but I got frustrated with the slow computers –we are very blessed with our ADSL lines!</i> (Table F.4.#10).

Participant 6 had seen the use of Hot Potatoes in another course and commented positively on using it in the future. Participant 6 also enjoyed the session with Wimba, although noting frustration with the slow computers, the participant nevertheless focused on the positive aspect of having an ADSL line at home.

4.3.1.4.2 Category 2: Mention the positive

Some of the participants focused on mentioning the positive aspects during the course of the programme, although they did experience negative emotions. Table 4.16 contains quotes regarding positive aspects mentioned by participants.

Table 4.16 Mention the positive

Theme	Sub-theme	Category	Quotation
4	Positivity	Mention the positive	P2: <i>It was a fun exercise to introduce Corel's many graphic options. I know, however, that this is a massive program, with lots and lots of nice things that one can do and therefore it will take more than these 6 months for us to really be able to use it to its fullest potential. Maybe we can have little things to do with it every now and then, each time challenging us to discover something else about the program?</i> (Table B.5.#5).
			P6: <i>I enjoyed the group activities and sharing our thoughts about the needs analysis. We have a lot of homework, but I am excited about it as it will be fun doing the activities while learning at the same time</i> (Table F.4.#7).

Participant 2 mentioned how enjoyable the introduction to the functionalities of CorelDraw had been, but was of the opinion that the time had been too limited to allow the participants to use the software to its fullest potential. Despite the amount of homework that needed to be done participant 6 voiced excitement about learning and sharing ideas.

4.3.1.5 Sub-theme 5: Control

The use of control as a coping strategy empowered the participant to be positive about handling or dealing with the problem at hand.

4.3.1.5.1 Category 1: Can handle it

Table 4.17 presents a quote pertaining to being able to cope successfully with the programme.

Table 4.17 Can handle it

Theme	Sub-theme	Category	Quotation
5	Control	Can handle it	P3: <i>On a personal note I've made a conscious decision to work hard towards the Telematic ... and ... for all the courses I'm involved in. It is going to take much more than just the next year or so, but I'm motivated to eventually transform all my Dept's undergraduate ... and ... into a Telematic programme. There's so much to do (and want to do), and so little time!!! (Table C.4.#1)</i>

Participant 3 reflects on a conscious decision to make the most of the time available to transform existing courses to online courses. This participant demonstrated resilience and the will to master the necessary technologies.

4.3.1.5.2 Category 2: Know how to

Table 4.18 present the quote relating to knowing how to use the technology.

Table 4.18 Know how to

Theme	Sub-theme	Category	Quotation
5	Control	Know how to	P3: <i>I've enjoyed using Blogger to reflect on my experiences during the Partners programme. This is probably as a result of being familiar with keeping personal fieldnotes during qualitative research projects (Table C.4.#2)</i>

Participant 3 reflected on past experiences and reasoned that the past experience of keeping field notes enhanced the enjoyment of using Blogger to reflect on experiences.

4.3.1.6 Sub-theme 6: Optimism

Participants used optimism as a coping strategy. This involved thinking about the situation in a positive manner, and expressing the belief that matters would improve.

4.3.1.6.1 Category 1: Things will work out

Table 4.19 presents quotes relating to expressions of optimism that all would be well in the end.

Table 4.19 Things will work out

Theme	Sub-theme	Category	Quotation
6	Optimism	Things will work out	<p>P3: <i>I am excited about the time that lies ahead. Excited, and scared, to develop a telematic programme that will meet expectations. Excited about professional growth. Excited about personal growth. Excited to take what I learn back to my Dept and Faculty to help, support and motivate them to also take up the telematic challenge. But, I'm also a bit scared. Scared that others might have such high expectations of me that I will not be able to meet. Scared that I will not meet my own high standards. Scared that I might get alienated from my Dept.</i></p> <p><i>I want to keep going forward with the following motto: "Never give up" (Table C.5.#1).</i></p>
			<p>P8: <i>The most obvious impact of implementing the P@W project is going to be the need to expand the technology at all faculties at TUT in order to implement telematic programmes. A second need that will arise is the need to expand facilities at Telematic Education otherwise they will not be able to cope with the need to develop programmes. The P@W will, in future, still prove to be the most significant teaching and development strategy that this institution has embarked on (Table H.6.#1).</i></p>
			<p>P2: <i>The blueprint seems to be lots of work, as I expected from the discussions on the design phase. It helps to talk to various people about what you want to do, and I am sure that the next workshops will also help us in this process (Table B.6.#2).</i></p>

By voicing excitement about the possible positive outcomes of the programme participant 3 moved from the negative emotion of fear to the positive and focused on endeavour and not giving up. Participant 8 argued about the impact of the

Partners@Work programme, and optimistically expressed belief in the importance of this programme as a teaching and development strategy. Participant 2 mentioned that the blueprint in the design phase had seemed to entail a considerable amount of work, but nevertheless expressed the optimistic belief that talking to various people and attending the next workshop would be helpful.

4.3.1.6.2 Category 2: Will be able to use the technology

Although some of the participants this group did not complete the video nor did they have practical experience of some of the technologies, they did comment positively on being able to use the technologies. Table 4.20 summarises quotes relating to a belief in being able to apply the specific technology.

Table 4.20 Will be able to use the technology

Theme	Sub-theme	Category	Quotation
6	Optimism	Will be able to use the technology	P2: <i>Video: I have completed the video thing yet... Mainly because of time –I have gone through the planning and preparation phases and found it interesting. Hope to complete it later in this semester, because there is a definite application possibility of this in the subject developed for Partners@Work (Table B.6.#8).</i>

Participant 2 expressed optimism about completing the video later in the semester, and mentioned the possibility of applying the technology in the course developed during the programme.

Table 4.20 Will be able to use the technology (cont.)

Theme	Sub-theme	Category	Quotation
6	Optimism	Will be able to use the technology	P3: <i>Video Conferencing: I don't have any practical experience in applying it, but have a good idea of the preparations and requirements for actual sessions (Table C.5.#2).</i>
			P3: <i>... 's continued training in specific WebCT tools was very helpful. For the first time I've actually not mind her going at quite a fast pace through all the different sections. Somehow it felt as if can do to make one feel comfortable and at ease with a specific program!!I could keep up without much difficulty. Just a month or so ago, it would have left me completely lost. Just shows you what a bit of first-hand experience (Table C.5.#8).</i>

Although participant 3 had not had practical experience of video conferencing, the participant nevertheless appeared confident knowing about the preparations and requirements needed for a session. Participant 3 touched on a very important factor – facilitating new educational technologies – the importance of repetition in the teaching of new skills. Participant 4 shared feelings of initial uncertainty and apprehension about the new technologies, but expressed a belief in the personal benefit of acquiring new skills.

4.3.1.6.3 Category 3: Self-motivation

The positive way in which participant 3 used self-motivation is encapsulated in the quotes in table 4.21.

Table 4.21 Self-motivation

Theme	Sub-theme	Category	Quotation
6	Optimism	Self-motivation	<i>P3: I've heard the following saying some time ago that meant a lot to me, and hopefully to everyone reading this blog: "Excellence and beauty comes from passionately motivated people". So, that's what I'm going to strive for in the coming days and weeks (Table C.5.#5).</i>
			<i>P3: I was so impressed by the Show-and-Tell session. The progress and quality of ..., ... and ... course development are just astounding. If I just think back on what things look like a month or so ago, it is amazing what the Partners have learned and become skilled in. They once again motivated myself to work harder, smarter and with gusto (Table C.5.#6).</i>
6	Optimism	Self-motivation	<i>P3: During this week I've once again realised the privilege of being a Partner, but also the responsibility that comes with it. Even though my head often spins after a contact session due to all the new stuff I've learned, it remains exciting and challenging to be empowered on such a wide technology-front. There is no way that I will ever be the same lecturer as before the Partners-programme!!! (Table C.5.#7).</i>

Participant 3 used optimism and self-motivation as a coping strategy, and focused on the quest for excellence. It is important to note the way in which participant 3 assumed responsibility for coping with the new technologies, and concentrated on the positive outcomes.

The use of optimism as a coping strategy means that participants focus on possible beneficial outcomes, and reframe the situation in a positive way.

4.3.1.7 Sub-theme 7: Use humour

Two of the participants only made use of humour as a coping strategy in an effort to transform negative feelings into positive feelings. Table 4.22 captures the quotes which illustrate the use of humour as a coping strategy.

Table 4.22 Use humour

Theme	Sub-theme	Category	Quotation
7	Use humour	Use humour	P8: <i>My feelings can only be described as “manic-calm”. At times I felt overwhelmed by the constant flow of homework while I was trying to learn the “language” of the computer programs. It was like trying to direct Chinese workers during the process of building a nuclear plant, while still learning to speak Chinese. However, once the program was mastered, it became very enjoyable to be part of the group all involved in instructional design (Table H.7.#2).</i>

Participant 8 made use of humour, and used a metaphor of teaching Chinese workers to perform a task while still being at the stage of learning to speak Chinese. Participant 8 used this strategy to cope with the initial feelings of being overwhelmed.

Table 4.22 Use humour (cont.)

Theme	Sub-theme	Category	Quotation
7	Use humour	Use humour	P8: <i>Our previous lecture made me feel sorry for the way I sometimes run over new students. We started the lecture on e-portfolios with the term hyperlink. I was hoping that I would, during the lecture, come to understand the term. Alas, at the end of the lecture I had not progressed beyond the term hyperlink. I today still think that it has something to do with a "BAIE GROOT APTEEK" (Table H.7.#6).</i>
			P2: <i>One day (when I am a grown-up) maybe I will also be able to create a nice video for my students... (Table B.7.#1).</i>
			P2: <i>I think some of us could have done with more time on both, but am sure that we will all live!! (Table B.7.#1).</i>

Participant 2 expressed sympathy with the way in which new students feel bombarded with new terms but are not given explanations for these terms. Tongue-in-cheek the participant mentioned the misunderstanding of the word ‘hyperlink’ – a very big pharmacy (Link being the name of a chain of pharmacies). Participant 2 had not yet completed a video and humorously states that, one day, as a grown up, he will create the video. These quotes illustrate the use of humour – looking at the lighter side of the situation – and hence not falling into the trap of negativity.

4.3.1.8 Sub-theme 8: Support seeking strategies

The coping strategy of support seeking used by the participants entailed *support for actions*. The use of this coping strategy occasions the use of other people as a sounding board or as a resource in seeking solutions for a specific problem.

4.3.1.8.1 Category 1: Ask for help or get help from instructional designer

When encountering problems with mastering a technology, participants relied on the help of the instructional designers or other participants in the Partners@Work programme. Table 4.23 presents quotes relating to support from the instructional designers.

Table 4.23 Ask for help or get help from instructional designer

Theme	Sub-theme	Category	Quotation
8	Support seeking strategies	Ask for help or get help from instructional designer	P4: ...also sought help from my ID and other partners if necessary (Table D.7.#3)
			P6: I realised this week that I have to see my instructional designer at least once a week as their is a lot I need help with! (Table F.56.#2).
			P8: My instructional designer helped, Partners helped and I even employed a personal friend to help me understand the programs, especially FrontPage (Table H.8.#1)

Participants 4, 6 and 7 mentioned obtaining help from other partners and the instructional designers in order to master new technologies.

4.3.1.8.2 Category 2: Ask for people’s opinions

Table 4.24 presents quotes pertaining to the need to receive feedback.

Table 4.24 Ask for people’s opinions

Theme	Subtheme	Category	Quotation
8	Support seeking strategies	Ask for people’s opinions	P2: <i>I also had to do many feedbacks and discussions at our faculty regarding Partners and everything we did. I am mostly satisfied with the subject material, but have a huge problem in the sence that I have not really received any true criticism, feedback or whatever you would like to call it. Even yesterday's feedback session did not help me much in this regard... I think that everybody is at this stage too involved in their own work to really sit down and give time and concentration for somebody else's work (Table B.8.#1)</i>
			P6: <i>Video: This was also really exciting. At first I was apprehensive to learn about all the terminology as I did not understand the technical mumbo jumbo, but was relieved to hear that I did not have to know about it and that other people would take care of all of that! It was a challenge to write the script for the video and I had to ask several people’s opinions as I was very unsure of myself, but received valuable feedback which helped me to improve the script. I felt proud to have my script accepted and would like to use it in future (Table F.6.#1).</i>

Participant 2 expressed the need to obtain honest criticism about the course material developed in order to be able to effect the necessary improvements. Valuable feedback as regards the scriptwriting for the video enabled the participant to improve the script, and thus empowered the participant.

4.3.1.8.3 Category 3: Learn from others

A valuable source of information for participants was their co-partners in the Partners@Work programme – people with creative ideas and a broad knowledge, and willing to share and help. Table 4.25 pertains to quotes about learning from others.

Table 4.25 Learn from others

Theme	Sub-theme	Category	Quotation
8	Support seeking strategies	Ask for people’s opinions	P2: <i>...gave me a nice idea or two that I will still include on WebCT (Table B.8.#4).</i>
			P3: <i>I've enjoyed the group-feedback we had to present on the basic steps of the ADDIE-model. Every presentation brought something new and valuable on the instructional design process (Table C.7.#4).</i>

Participant 2 and 3 commented on the way in which sharing ideas and learning from the presentations of other participants aided the instructional design process, and

helped them cope with the mastering of new technologies.

4.3.1.9 Summary: Theme 1

Throughout the narratives positivity is exuded like a golden thread and elicited questions about the link with emotional intelligence. These participants expressed their feelings, thoughts and emotions, shared their excitement, and transformed uncertainty and fear into optimism. What is highly significant is the absence of negative coping strategies such as distracting actions, avoidant actions and repression.

The next section will explore the thoughts, reasoning and emotions of the second group of participants in terms of theme 2.

4.3.2 Theme 2: Using positive and negative coping strategies

Participants in this group made use of both positive and negative coping strategies. The detailed sets of data of participants 5 and 9 are available in appendices E and G. Figure 4.4 summarises the sub-themes and categories within Theme 2.

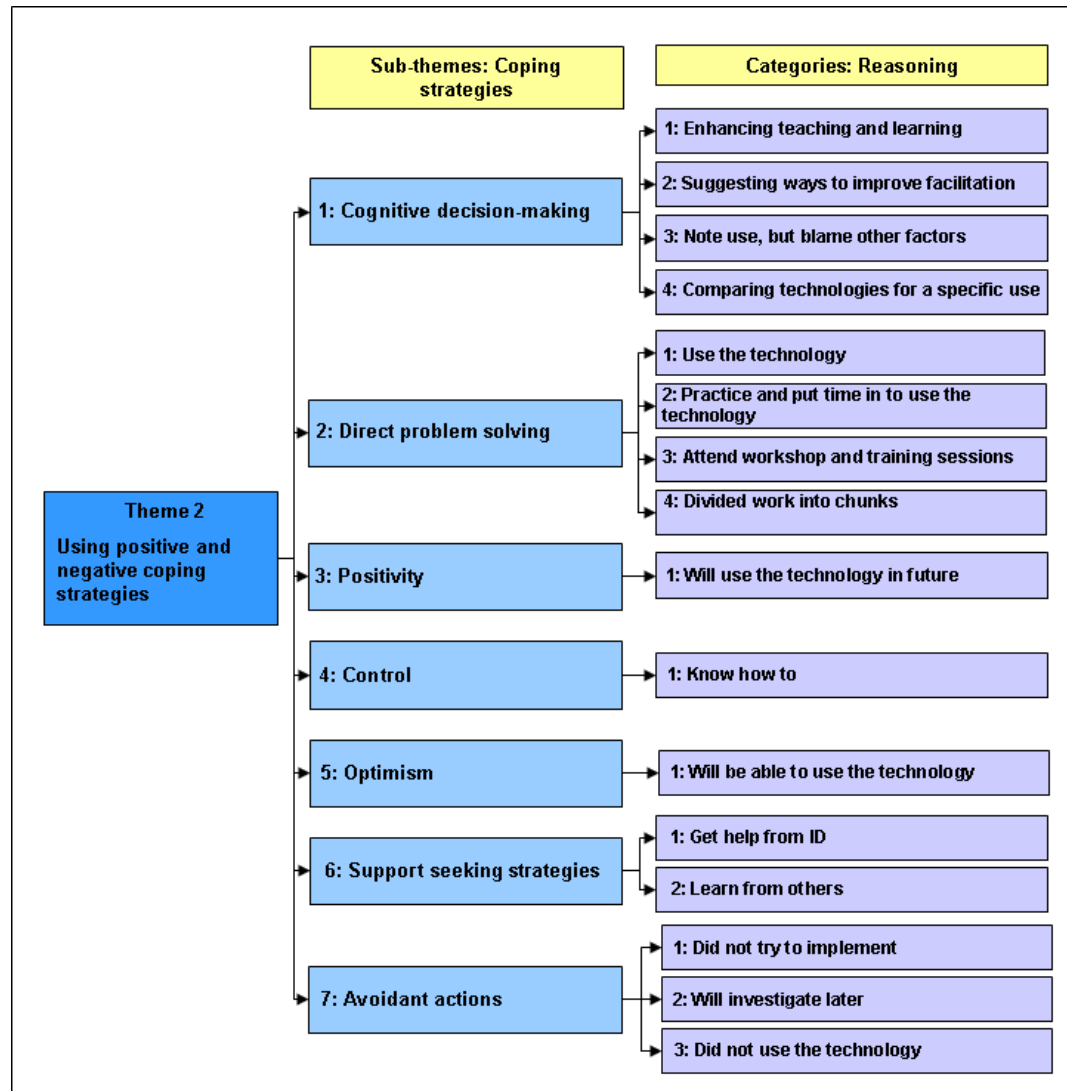


Figure 4.4 Summary of sub-themes and categories within theme 2

While mastering new technologies participants in this group made use of the coping strategies of cognitive decision-making, direct problem solving, positivity, control, optimism, and support seeking strategies, as well as avoidant actions.

4.3.2.1 Sub-theme 1: Cognitive decision-making

As with the participants in theme 1, this group of participants illustrated their reasoning about ways to solve a problem when confronted with the mastering of new technologies by using cognitive decision making as a coping strategy.

4.3.2.1.1 Category 1: Enhancing teaching and learning

As part of the use of cognitive decision-making as a coping strategy, participants thought of ways to enhance teaching and learning. Quotations regarding reasoning on ways in which technologies may enhance teaching and learning are presented in table 4.26.

Table 4.26 Enhancing teaching and learning

Theme	Sub-theme	Category	Quotation
2	Cognitive decision-	Enhancing teaching and learning	P5: <i>The way in which the activity re e-testing was introduced was very creative (die suigstokkie-ding). From the discussions in the debate it was very clear that everybody is willing to use it, but also realise the limitations in certain circumstances. I am personally of the opinion that e-testing will be used - extensively - in 'normal' tests during the semester. However, I don't see that e-testing will feature in exams in the near future - due to all the 'negative' aspects mentioned during the debate (Table E.2.#13).</i>
			P9: <i>WebCT: It's a magnificent learning management system which can be tailor - made to suit individual needs. The features of the system provided me with some of the solutions to my teaching problems (Table I.2.#5).</i>

Participant 5 commented on e-testing and reasoned about the use and limitations of this form of testing, while participant 9 mentioned the application of WebCT in solving teaching problems.

4.3.2.1.2 Category 2: Suggesting ways to improve facilitation

With the use of cognitive decision-making, participants voiced concerns about factors within the programme which were hampering the coping process. Quotes relating to suggestions on ways in which to improve the programme are given in table 4.27.

Table 4.27 Suggesting ways to improve facilitation

Theme	Sub-theme	Category	Quotation
2	Cognitive decision-making	Suggesting ways to improve the facilitation	<p>P5: <i>After being occupied with homework for the whole weekend, 17 and 18 July, I came to the following conclusion: The presentations of new programmes are way to fast. It feels as if everything is rushed over to give me the "knowledge" of the existence of the programmes. However, I hardly understand any of the "workings" of these programmes. I battled through some of the homework and felt that I actually waste a lot of valuable time. Wouldn't it be better to start with the development of the subject/courses and then use what is available, in collaboration, with the ID's? I just wonder... maybe it's just my age, but I cannot even remember what we have done without looking at the programme! To me it is a matter of too much, too quickly, too little time, too little relevance (Table E.2.#2).</i></p> <p>P5: <i>One thing that bothers me: We received a lot of 'homework'. With that as such I have no problem. However, the time in which to complete it, is unrealistic. I do not mind to work during week ends, BUT unfortunately I do not have access to internet at home. That leaves me with all the work to do for Monday (21st). To do good, efficient work - irrespective of the depth of the assignment - I am of the personal opinion that we should receive enough (ample)time to complete assignments. It does not help to cram different tasks or exercises into a day or two - it creates unnecessary pressure and does not allow for optimum performance. I now have to "quickly" do all these assignments on Monday morning - afternoon, and have my doubts about the quality. On the other hand, I also have to work in a team, meaning that the quality of my inputs will have an effect on my team members. I prefer best quality at all times, but then we must have time! (Table E.2.#1)</i></p>

Participant 5 commented on the amount of homework given, and felt that it was a waste of time. The participant expressed the opinion that the presentations on new technologies were too rushed, and did not allow sufficient time to grasp the programmes. What is significant in this instance is the apparent inability to turn negative feelings into positive feelings.



Table 4.27 Suggesting ways to improve facilitation (cont.)

Theme	Sub-theme	Category	Quotation
2	Cognitive decision-making	Suggesting ways to improve the facilitation	<p>P5: <i>At first it was nerve-racking to think about presenting the "little" I have done so far. Eventually, it turned out to be not "that bad". I'm still worried about the little progress I have made up to now. After the blueprint I realized that there is a h... of a lot to do in very little time. I think I would prefer to actively start with the development of my subject, rather than to spend more precious time on homework. Not that the homework does not have a function! I just feel that the time I spend struggling to design a banner and graphics (because that is the homework) can be used much more productively in designing my subject! During the hands-on session in the internet lab, I again realised the value of these sessions. This is where we learn how to apply the tools - not with homework!</i></p> <p><i>Looking forward to really start with the contents of my subject (Table E.2.#15).</i></p>
			<p>P5: <i>As I did not manage to prepare all the banners and stuff with Corel and Frontpage I could not participate fully in the WebCT Designing session. Fortunetaly I got something from other files and could at least start doing something. This is the difficult part: If one does not understand the functioning and/or application of one thing, it is difficult to go on to the next. I don't appreciate being 'behind' - never was and never will be...! The hands-on session is the only way to learn to use everything. I don't think it is necessary for us to learn by trial-and-error. We don't have time to press all the wrong buttons before getting it right! Therefore I think all will appreciate a step-by-step layout of 'new' things to do and programmes to use (Table E.2.#8).</i></p>

Participant 5 was worried about the amount of development that still needed to be done, and argued about the merits of homework versus hands-on sessions in the facilitation of mastering new technologies. This participant focused on the amount of homework given, and was of the opinion that the homework, which involved designing a banner in FrontPage and CorelDraw, was unnecessary. The participant did not manage to complete the homework and was thus not prepared for the design session in WebCT. Participant 5 voiced concern about the way in which the session was handled, and suggested the option of providing a step-by-step guide that would aid the mastering of new technologies.

Table 4.27 Suggesting ways to improve facilitation (cont.)

Theme	Sub-theme	Category	Quotation
2	Cognitive decision-making	Suggesting ways to improve the facilitation	<p>P9: <i>I find hands on computer lesson too difficult to follow, due to the fact that 'what are we doing? and how its done? ie the buttons on the keyboard, in the head of the presenter. An ideal situation for me will be to have, what? on a piece of paper so as to understand the process and actually see what ist that I,m trying to execute step by step. Then I can struggle only with the ,How? (Table I.2.#1).</i></p> <p>P5: <i>Thank you, ..., for handing out a step-by-step guide to upload files on WebCT. It saved me another day of time-consuming suffering to get this right! At least I think I will be able to complete this part of the homework now! Thanks(Table E.2.#9).</i></p>

Participant 9 reiterated the request made by participant 5, as this participant had had difficulty following a lesson and also suggested that a step-by-step guide would be helpful.

Participant 10 compiled a step-by-step guide for the uploading of files in WebCT and handed it out to the rest of the group. Participant 5 commented on the use of this guide which saved time spent having to complete the task by trial and error.

Table 4.27 Suggesting ways to improve facilitation (cont.)

Theme	Sub-theme	Category	Quotation
2	Cognitive decision-making	Suggesting ways to improve the facilitation	<p>P5: <i>Wow! My hands were sweaty, my stomach had 'butterflies', my mouth was dry... All this for a 60 second video recording on anything!! I felt terrible before, during and after my video recording. As a matter of fact, I afterwards I felt completely incompetent and a total fool. Nothing I planned worked out! At least now I know how to prepare, for what to prepare, and what to do and not to do, if there will ever be another exercise like this. Although we had a lot of fun and many laughs, I would suggest the following: Make sure that a very clear message gets across with regards to preparation. My understanding (misunderstanding) was that we had to bring the props, etc. for the next worksession DURING WHICH we will be taught how to prepare and what to do and not to do. If I would have known that we had to be totally prepared, it might have been a more efficient experience to me. Now I feel that it was such a disaster, I would never consider doing a video production! (Table E.2.#12).</i></p>

As a consequence of a misunderstanding about the preparations that should have been done beforehand, participant 5 experienced the video recording session as distressing, and expressed dissatisfaction with the way in which the session had been conducted. The participant had felt incompetent and perceived the experience as a disaster, and, as a result, expressed a definite dislike of video productions. The participant expressed the fact of never again considering using a video production.

Table 4.27 Suggesting ways to improve facilitation (cont.)

Theme	Sub-theme	Category	Quotation
2	Cognitive decision-making	Suggesting ways to improve the facilitation	<p>P9: <i>Insufficient time was allocated to microsoft front page, or was it meant to be a warm up exercise. I will appreciate a repeat of it (Table 1.2.#2).</i></p> <p>P9: <i>HOT POTATO & WIMBA SESSION: I would like to use both softwares in my course development, the hands on session was too short. If times allows, I will appreciate a repeat session (Table 1.2.#3).</i></p>

Cognitive decision-making was also used as a coping strategy to comment on aspects or situations perceived as a hindrance in the process of mastering new technologies. The issue of too much homework was frequently mentioned. What is significant is the difference in the ways in which the problem was broached.

An observation concerning the approach used by participants to convey their opinions about ways in which to improve the programme is the positive approach rather than the negative approach of certain participants. Could there be a link with emotional intelligence?

4.3.2.1.3 Category 3: Note use, but blame other things

As with the previous groups the usefulness of the technology was noted, but other factors blamed for the inability to cope adequately. Table 4.28 presents the quotes noting the use of blogging, but blaming other factors.

Table 4.28 Note use but blame other things

Theme	Sub-theme	Category	Quotation
2	Cognitive decision-making	Note use, but blame other things	<i>P5: Today I realised that I haven't blogged for more than a month. Sorry guys - for those of you who need this info for research, etc. Why haven't I blogged: At some stage everything became too much! It was bloggers and surveys and homework and course development and battling to get to know how to operate new programs and deciding on a research project, writing a proposal, thinking about video production, etc., etc. Do you really blame us for not blogging?! (Table E.2.#3).</i>

Although aware that blogging was of use to the other participants, participant 5 blames the pace of the programme for not having blogged regularly. It would appear that participant 5 experienced the amount of homework together with the other tasks that needed to be completed within the programme as too onerous. The negative tone and frustration of this narrative is significant.

4.3.2.1.4 Category 4: Comparing technologies for a specific use

As more than one technology was available for a specific use participants compared technologies in terms of ease of use. Table 4.29 presents the reasoning of participant 5.

Table 4.29 Comparing technologies for a specific use

Theme	Sub-theme	Category	Quotation
2	Cognitive decision-making	Comparing technologies for a specific use	<i>P5: I enjoyed the hands-on session on Perception, but I doubt whether I would use that in stead of Respondus! (Table E.2.#10).</i>

As was the case with participants in the previous group, participant 5 expressed a preference for Respondus, perceiving it to be more user-friendly than Perception.

4.3.2.2 Sub-theme 2: Direct problem solving

In conjunction with the group of participants in theme 1, participants in theme 2 also made use of direct problem-solving coping strategies when they felt familiar with the use of a particular technology.

4.3.2.2.1 Category 1: Use the technology

As in the previous group, participants apparently experienced no problems using a technology they perceived as user-friendly. Table 4.30 provides quotes pertaining to the use of technologies.

Table 4.30 Use the technology

Theme	Sub-theme	Category	Quotation
2	Direct problem solving	Use the technology	P5: <i>Yahoo: Most frequently used of all technology tools!!! I enjoy Yahoo because it is a form of 'contact' with the Partners and ID's. Quick and easy way to ask a question and get an immediate answer or just to find out how someone else is doing. Use it!</i> <i>Enjoyable and usable, effective. (Table E.3.#4).</i>
			P5: <i>Respondus: Empowering, save a lot of time - efficient.</i> <i>Listening skills and exercise</i> <i>Empowering. (Table E.3.#2).</i>
			P9: <i>Respondus: It has a friendly environment, most of my assessments were created using respondus. Impressed by the technology at first sight (Table I.3.#5)</i>
			P5: <i>WebCT: Empowering, boost in self-confidence, efficient</i> <i>Conscientiousness, motivated and inspired by ... (ID), hel from ... (ID) (Table E.8.#3).</i>

A question that arises from the observation that, once a technology has been perceived as user friendly, no problems will be experienced in mastering the technology is the impact of this fact on the facilitation of a particular technology. What can be done to ensure that participants experience a specific technology as user friendly?

4.3.2.2.2 Category 2: Practice and put time in to use the technology

As was the case with the previous group of participants, these participants had no problem practising and spending extra time in the case of a technology perceived to be user friendly. Quotes pertaining to the practising and spending time in using the technology are presented in table 4.31.

Table 4.31 Practice and put time in to use the technology

Theme	Sub-theme	Category	Quotation
2	Direct problem solving	Practice and put time in to use the technology	P9: <i>Front Page: I enjoyed using the software. The beauty of the program made me sit endless hours on the computer. I had to explore the bars and dropdown menu lists of Microsoft office (Table 1.3.#3)</i>
			P9: <i>Corel Draw: It was very useful in addressing graphic problems on my web pages. Practice (Table 1.3.#2).</i>

What is significant is the positive way in which participant 9 mentioned that, due to the usability of the technology, practice and exercise were no problem. As regards the impact of this fact on the facilitation of new technologies: instructional designers should take cognisance of the effect in terms of usability on the mastering of new technologies. How would it be possible to improve on the facilitation of a new technology in order to highlight possible ways of using the technology?

4.3.2.2.3 Category 3: Attend workshops and training sessions

An important facet that emerged and was seen as a hindrance to effective coping on the part of certain participants was their initial perceptions and the way in which the facilitator introduced the technology. Table 4.32 presents quotes pertaining to attending workshops and training sessions.

Table 4.32 Attend workshops and training sessions

Theme	Sub-theme	Category	Quotation
2	Direct problem-solving	Attend workshops and training sessions	P5: <i>Front Page: The importance of FP only struck me when I had to upload material onto WebCT. I realised then that I needed the skill long ago. After ...'s explanation I understood why it was needed. Now it forms a crucial part of my preparations and development of material. Very empowering and satisfying. It is a pity that the importance was not emphasised from the beginning. The initial training session was disastrous. I perceived the presenter as impatient and did not dare to ask questions! I attended the additional lecture by.... and "n lig het toe opgegaan"! Good feeling to be able to use the programme in development work (Table E.3.#1).</i>

Participant 5 had perceived the presenter as impatient, and, as a result, had not asked questions. Consequently, the participant had had to attend an additional lecture.

4.3.2.2.4 Category 4: Divided work into sections

Some of the participants mentioned the methods they had used in order to master the technologies, namely, taking it step by step. Table 4.33 presents the quotes pertaining to the division of work into sections.

Table 4.33 Divided work into sections

Theme	Sub-theme	Category	Quotation
2	Direct problem solving	Divided work into chunks	P9: <i>I divided my tasks into chunks. Began with the easiest then proceeded to more challenging tasks (Table 1.3.#1).</i>

The positive way in which participant 9 recounted coping with tasks – dividing the tasks into sections and doing the easiest first before proceeding with the more challenging chunks – is significant.

4.3.2.3 Sub-theme 3: Positivity

Positivity as a coping strategy entails thinking about the good things that have happened. The use of positivity enables participants to view a situation in a positive light, and focus on positive thoughts.

4.3.2.3.1 Category 1: Will use the technology in future

Table 4.34 contains quotes dealing with the future use of technologies.

Table 4.34 Will use the technology in future

Theme	Sub-theme	Category	Quotation
2	Positivity	Will use the technology in future	P5: <i>Today was very educational. I enjoyed the Yahoo-session especially. We got a chance to really "link" with each other. Great fun and I think it can also be very useful (Table E.5.#1).</i>
			P5: <i>I was aware of a book available in, but it was impressive to see how many different aspects are covered online. This will make my life a lot easier in developing the course for !! Good exercise. I will get a lot more when I am actually starting to work (Table E.5.#3).</i>
			P5: <i>The graphics was a little quick, but at least I know about the existence of many great things to use without a lot of difficulty (Table E.5.#5)..</i>

Table 4.34 Will use the technology in future (cont.)

Theme	Sub-theme	Category	Quotation
2	Positivity	Will use the technology in future	P5: <i>After has explained the generic development of a blueprint document structure, I experimented with the concept in flow diagrams, keeping my own subject in mind. It did make sense to start planning everything on paper. By looking at these very rough blocks and arrows on paper I could see something is actually happening in my mind (Table E.5.#4).</i>

Participant 5 expressed enjoyment and appreciation about the use of the Yahoo messenger – linking with co-participants, the availability of online resources for the development of course material, and the practical development of a blueprint structure. The perception that a technology was beneficial resulted in positive thinking.

4.3.2.4 Sub-theme 4: Control

Control as a coping strategy entails that, due to previous experience, the participant is able to deal with a problem.

4.3.2.4.1 Category 1: Know how to

Table 4.35 presents the quote pertaining to knowing how to use the specific technology.

Table 4.35 Know how to

Theme	Sub-theme	Category	Quotation
2	Control	Know how to	P5: <i>Video: Previously employed in classes. Good feeling to be able to give feedback to students (Table E.6.#1).</i>

Participant 5 reflected on past experiences and reasoned that prior experience with a technology enhances the enjoyment derived from using the specific technology.

4.3.2.5 Sub-theme 5: Optimism

Optimism as a coping strategy was used by participants to regard the future positively and optimistically.

4.3.2.5.1 Category 1: Will be able to use the technology

Table 4.36 presents a quote dealing with the ability to use a specific technology in the future.

Table 4.36 Will be able to use the technology

Theme	Sub-theme	Category	Quotation
2	Optimism	Will be able to use the technology	P9: <i>Creating a webct folder was exciting, its one of the hands on exercises that has made feel good and confident. At the end of the day I had completed my task successfully. I'm looking forward to more exciting events that will be as successful as the webct folders (Table I.4#1).</i>

The successful creation of a folder in WebCT empowered participant 9 who, as a result, experienced positive emotions in terms of feeling confident and good. This led to the participant expressing optimism and positive thinking as regards future events.

4.3.2.6 Sub-theme 6: Support seeking strategies

A support seeking coping strategy used by the participants entailed *support for actions*. The use of this coping strategy involves the use of other people as a sounding board or as a resource in seeking solutions for a specific problem.

4.3.2.6.1 Category 1: Get help from instructional designer

When they encountered problems with mastering a technology, participants relied on the help of the instructional designers or other participants in the Partners@Work programme. Table 4.37 deals with eliciting help and support from the instructional designer.

Table 4.37 Get help from instructional designer

Theme	Sb-theme	Category	Quotation
2	Support seeking strategies	Get help from instructional designer	P5: <i>Conscientiousness, motivated and inspired by ... (ID), hel from ... (ID). Excellent explanation of how to use by ID. Ek voel gemaklik met die nuwe vaardigheid, maar weet ook dat ek op die 'back-up' van my IO kan steun sou ek probleme ervaar (Table E.8.#3).</i>

Participant 5 commented positively about receiving help from the instructional designer, and expressed awareness that support from the instructional designer was available, should it be needed.

4.3.2.6.2 Category 2: Learn from others

Participants valued the Show and Tell sessions during which they learnt from each other. This is expressed in the quote presented in table 4.38.

Table 4.38 Learn from others

Theme	Sub-theme	Category	Quotation
2	Support seeking strategies	Learn from others	P9: <i>The presentations were excellent, creativity was displayed by some of my colleagues. I learnt new ways of approaching my work. It was really encouraging and fulfilling to receive positive responses from you (Table 1.6.#1).</i>
			P9: <i>I always look forward to this session. It gives us an opportunity to share and reflect on our experiences as we develop materials. I found it to be very interesting, for me that's where actual learning takes place (Table 1.6.#2).</i>
			P5: Show and Tell: <i>A good way of getting ideas of what can be done and what will work for one's own programme (Table E.8.#8)</i>
			P5: <i>The Show & Tells are always very interesting. Each partner has his/her own individual approach and this makes the program unique. I don't think that it will ever be possible to "standardise" courses or subjects because each one has its own requirements and possibilities. One can use ideas from other courses, but eventually will have a own unique program (Table E.8.#9).</i>
			P5: <i>I am looking forward to each Tuesday - not only to see and hear about the work that has been done and new work to come, but also to feel 'at home' with people who are good to be with, who share – in many ways – and who are also fun to be with while learning from them. I feel like being part of a huge, friendly family! Thank you all! (Table E.8.#10).</i>

Both participants expressed their enjoyment and gratitude as regards sharing and learning from other participants during the Show and Tell sessions in the Partners @Work programme. During these sessions participants experienced support from and gave support to one another, thus forming a strong social support group.

4.3.2.7 Sub-theme 7: Avoidant actions

Participants made use of avoidant actions as a coping strategy – either avoiding or staying away from a problem.

4.3.2.7.1 Category 1: Did not try to implement

Table 4.39 presents quotes pertaining to the reasons for not implementing a technology.

Table 4.39 Did not try to implement

Theme	Sub-theme	Category	Quotation
2	Avoidant actions	Did not try to implement	P5: <i>Video conferencing: Presenter not too positive or clear with regards to usability – therefore not considered as an option to use. No mastering necessary. Seems to me that other persons have to do the work – I just need to be there....? Still not clear where it will fit in. Did not really try to implement. Previous attempt (prior to P@W) failed. Not interested (Table E.7.#1)</i>
			P9: <i>Video Conferencing: Too terrified to think of one. The last item to attempt on my list (Table I.5.#2).</i>

Participant 5, had perceived the presenter as “not too positive or clear” regarding the usability of video conferencing and this, together with a failed previous attempt, resulted in this participant not being interested in video conferencing. Participant 9 expressed the fact that of being too afraid to even think about doing a video conference and listed it last on the list of technologies to be attempted. This raises an important aspect in the facilitation of new technologies, namely, the role of the presenter in the way in which participants will come to perceive the new technology.

4.3.2.7.2 Category 2: Will investigate later

Table 4.40 presents a quote illustrating reasoning about avoidant action by proposing to investigate the implementation of a technology at a later date.

Table 4.40 Will investigate later

Theme	Sub-theme	Category	Quotation
2	Avoidant actions	Will investigate later	P5: <i>Camtasia seems to be very easy to use. Will try it out later... if needed...</i> (Table E.7.#3).
			P9: <i>Video: Not yet explored. Awaiting the results of the scripts submitted</i> (Table I.5.#1).

Participants 5 and 9 both mentioned Camtasia and video as technologies that they had not used, but would investigate at some stage in the future.

4.3.2.7.3 Category 3: Did not use the technology

Table 4.41 presents a quote on not using a technology.

Table 4.41 Did not use the technology

Theme	Sub-theme	Category	Quotation
2	Avoidant actions	Did not use the technology	P5: <i>Corel Draw: Not used. Cannot remember when it was done!!</i> (Table E.10.#5).

Participant 5 had previously voiced dissatisfaction about having to use CorelDraw to design a banner, and, in the following session, had not had the work done, as he had not completed the homework. In contrast with this, the participant now stated that he had not used the technology and could not remember when it had been dealt with.

4.3.2.8 Summary: Theme 2

What is significant in this group of participants is the use of positive coping strategies when the technology was perceived as user friendly, and negative coping strategies when the technology was perceived as either difficult or not necessary. Participant 9 had used avoidant coping strategies when the technology had been perceived as difficult. Participant 5 focused negatively on the presenter in the case of video conferencing, and had had an issue with homework being given. Although receiving help from the instructional designers was an integral part of the programme, participant 9 did not mention eliciting help or support from the instructional designers as part of support seeking coping strategies.

The next section of the chapter contains an exploration of the thoughts, reasoning and emotions of the participants grouped in theme 3.

4.3.3 Theme 3: Using negative and no positive coping strategies

Participants in this group made use of negative coping strategies. The detailed sets of data of participants 1, 7 and 10 are available in appendices A, G and J. Figure 4.5 summarises the sub-themes and categories within theme 3.

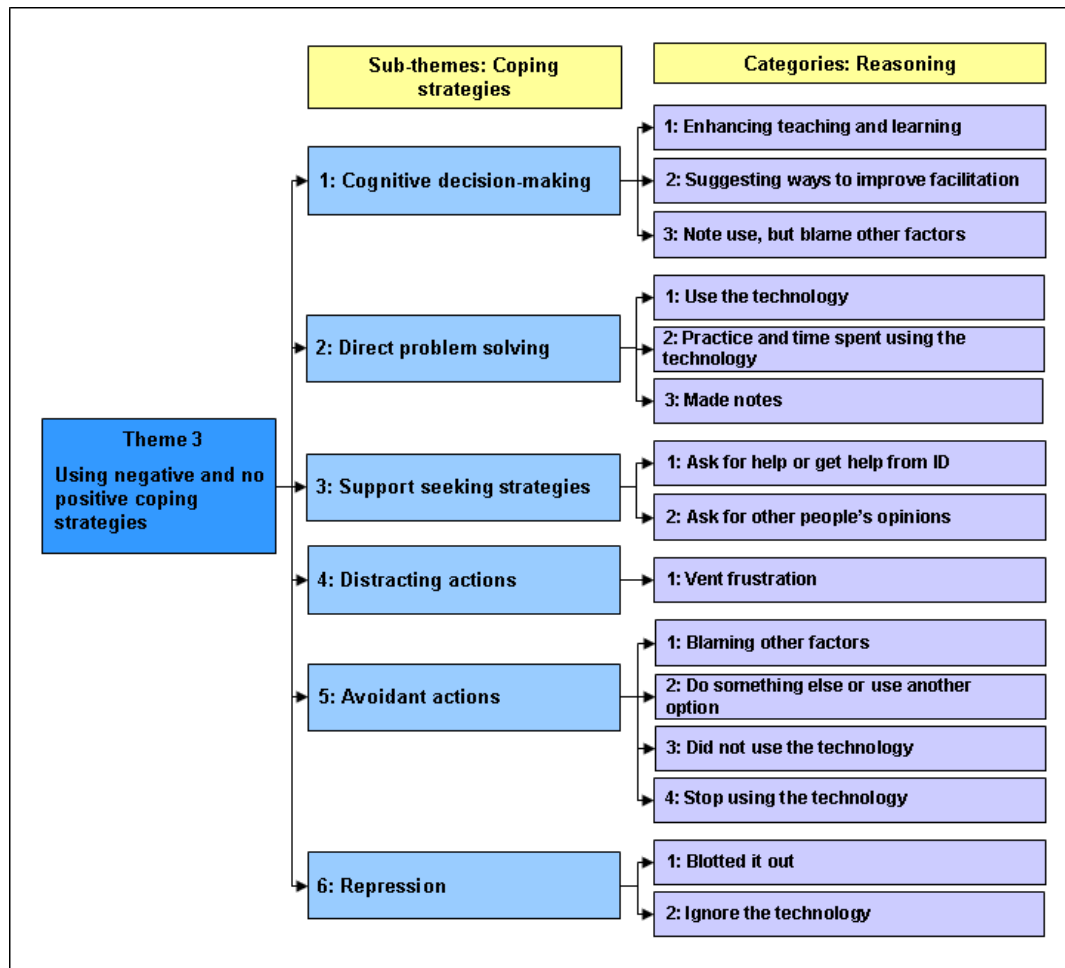


Figure 4.5 Summary of sub-themes and categories within theme 3

Participants 1, 7 and 10 made use of cognitive decision-making, direct problem solving, support seeking strategies, distraction actions, avoidant actions and repression as coping strategies. This group of participants did not use any positive cognitive reframing coping strategies.

4.3.3.1 Sub-theme 1: Cognitive decision-making

Cognitive decision-making entails thinking about the best ways to solve a perceived problem.

4.3.3.1.1 Category 1: Enhancing teaching and learning

As with the participants in the previous groups, participants in this group linked the use of the technology to their own field as an enhancement of the teaching and learning process. Table 4.42 contains quotes pertaining to the enhancement of teaching and learning.

Table 4.42 Enhancing teaching and learning

Theme	Sub-theme	Category	Quotation
3	Cognitive decision-making	Enhancing teaching and learning	P10: <i>Task and assignments and their due date is a part of the learning area which is also very important, especially if the student missed the lesson he/she can use WebCT for reverence. The LMS also made provision to manage working groups and report back can be done by the students. It helps me to manage my class room activities much more effectively (Table J.2.#1).</i>
			P1: <i>Respondus is far more user friendly [sic] than e-testing on webct. I think the students will find it easier too. Want to have a careful look and see what qualities make it so user friendly and then try to incorporate these elements in my programme that I am developing.(Table A.2.#6)</i>
			P1: <i>E-testing will be a saving grace. Students can do tests in their own time with the random aspect.it will save tremendous time on marking.(Table A.2.#7)</i>
			P7: <i>Respondus: Great, this was the answer to my dreams. The program did exactly what I wanted. Easy to operate and upload to WebCT (Table G.3.#4).</i>
			P7: <i>WebCT: The feedback from the students was tremendous. There was lots of praise for the course material, which was written in such a way that it was easily understood. From an educational point of view, this was extremely good, because the student obtained instant feedback from the Internet and from the lecturer who facilitated the Internet sessions.</i>
			<i>Students where delighted with the Quizzes and especially with the Examinations, where they obtained their results immediately (Table G.5.#7).</i>

Participant 10 reasoned about the ways in which WebCT as a learning management system may possibly be of assistance in the effective management of classroom activities. Participants 1 and 10 commented on the use of Respondus, e-testing and WebCT as learning management systems.

An important element in the reasoning is the positive way of thinking about ways in which the use of specific technologies could benefit the participants in the development of teaching and learning materials for their courses.

4.3.3.1.2 Category 2: Suggesting ways to improve facilitation

In the process of mastering the different technologies, participants identified areas that could improve facilitation. The suggestions made regarding the improvement of the facilitation process when introducing new educational technologies signified cognitive thinking on possible ways in which to solve problems. Of significance here is the difference in positivity shown by participants in this group and participants in group 1 when voicing their suggestions on ways in which to improve the facilitation of new technologies. Table 4.43 presents quotes on suggesting ways to improve facilitation.

Table 4.43 Suggesting ways to improve facilitation

Theme	Sub-theme	Category	Quotation
3	Cognitive decision-making	Suggesting ways to improve the facilitation	P1: <i>IN FUTURE IN CLASS: REPETITION AND AN EXERCISE ON PRE-KNOWLEDGE</i> (Table A.2.#1).
			P1: <i>Would like to have revision sessions before we start with new computer skills</i> (Table A.2.#2).
			P1: <i>Found the first part of the hands on programme extremely useful as it was a revision of uploading work to WEBCT. Got slightly lost during the creating of our own courses in WebCT.</i> (Table A.2.#8).

The suggestions on ways in which to improve the facilitation process were sometimes very loud and clear. Repetition and exercises on pre-knowledge, with the emphasis on the importance of the use of capital letters, were strongly advocated.

What is significant in this instance is the negative way in which participants conveyed their thoughts about ways in which to improve the programme – this is in direct contrast

to the positivity shown by participants in theme 1. Could there be a link with emotional intelligence?

4.3.3.1.3 Category 3: Note use, but blame other factors

Table 4.44 presents reasoning as regards noting the use of a technology but blaming other factors for the decision not to use the technology.

Table 4.44 Note use, but blame other things

Theme	Sub-theme	Category	Quotation
3	Cognitive decision-making	Note use, but blame other factors	<i>P7: Yahoo Messenger: Very useful to communicate but I don't like it for the same reason I do not like e-mail. It wastes a lot of my time, which I don't have a lot of. Workload problems (Table G.2.#1).</i>

On a different note participant 7 mentioned how useful Yahoo messenger is for purposes of communication, but voiced an unequivocal dislike of technology, viewing it as waste of time. Important to note in this instance, is that despite having a computer, the participant chose to write the prompted essay, not typing it and sending it to the ID as requested.

The question thus arises as to how an aversion to technology in general would influence the mastering of new technologies. Does not being able to see the benefit of using technology link to emotional intelligence in some way? Could the difference between commenting in a positive way and the negative blaming of circumstances be attributed to a specific branch in the emotional intelligence scores of the participants?

4.3.3.2 Sub-theme 2: Direct problem solving

As with the participants in the other groups, it would appear that this particular coping strategy was preferred in times of highly perceived self-efficacy.

4.3.3.2.1 Category 1: Use the technology

Table 4.45 presents quotes on the use of a technology.

Table 4.45 Use the technology

Theme	Sub-theme	Category	Quotation
3	Direct problem solving	Use the technology	P1: <i>Yahoo was excellent. I enjoyed it very much as I managed to keep up most of the time. I find I have to stop myself from delving into the websites and losing track of what is going on (Table A.3.#3).</i>
			P7: <i>Respondus: Great, this was the answer to my dreams. The program did exactly what I wanted. Easy to operate and upload to WebCT (Table G.3.#4).</i>
			P1: <i>Blogger: Easy. Worthwhile tool. (Table A.3.#4).</i>
			P10: <i>Respondus: Het Respondus baie positief beleef en user friendly .(Table J.3.#3).</i>
			P1: <i>Front page: Enjoyed this. Felt able and competent (Table A.9.#1).</i>
			P1: <i>Repondus: Felt I could cope with it and master it. (Table A.9.#3).</i>

It would seem that, if a particular technology were perceived as user friendly, the participants would enjoy this technology and use it extensively. The observation that once a technology is perceived as user friendly no problems are experienced in mastering the technology gives rise to a question regarding the impact of this on the facilitation of a technology. What could be done to ensure that participants experience a technology as user friendly?

4.3.3.2.2 Category 2: Practice and time spent using the technology

As with the previous cases the participants had no problem practising and spending extra time if the particular technology were perceived as user friendly. Table 4.46 pertains to quotes on practising and spending time using a technology.

Table 4.46 Practice and time spent using the technology

Theme	Sub-theme	Category	Quotation
3	Direct problem solving	Practice and time spent using the technology	P1: <i>Respondus: No problem with practice (Table A.3.#1).</i>
			P1: <i>Yahoo was excellent. I enjoyed it very much as I managed to keep up most of the time. I find I have to stop myself from delving into the websites and losing track of what is going on (Table A.3.#3).</i>

Note the positive way in which participants mentioned that, due to the usability of the technology, practice and exercise presented no problems. As regards the impact of this on the facilitation of new technologies, instructional designers should take cognisance of the effect that usability has on the mastering of new technologies. How could the facilitation of a new technology be improved in order to highlight possible ways in which the technology could be used?

4.3.3.2.3 Category 3: Made notes

Table 4.47 deals with the making notes as a coping strategy in mastering a new technology.

Table 4.47 Made notes

Theme	Sub-theme	Category	Quotation
3	Direct problem solving	Use the technology	<i>P7: I made careful notes on the operating instructions, then, when I got home, I tried to do it again using the instructions which I then modified to be more precise (Table G.3.#1).</i>

Participant 7 made notes and compiled a step-by-step guide which was then handed out to the other participants.

The use of direct problem-solving coping strategies is reflected in the efforts made by participants to improve the situation – either by making notes, dividing work into chunks, looking for a manual, practising or experimenting.

4.3.3.3 Sub-theme 3: Support seeking strategies

The support seeking coping strategy used by the participants entailed *support for actions*. The use of this coping strategy involves seeking out another person as a sounding board or as a resource in looking for solutions for a specific problem.

4.3.3.3.1 Category 1: Ask for help or obtain help from instructional designer

When encountering problems with mastering a technology, participants relied on the help of the instructional designers or other participants in the Partners@Work

programme. Quotes in Table 4.48 deal with requesting help or obtaining help from the instructional designer (ID) as a coping strategy.

Table 4.48 Ask for help or obtain help from instructional designer

Theme	Sub-theme	Category	Quotation
3	Support seeking strategies	Ask for help or get help from instructional designer	P1: <i>Blogger: Asked fellow partners to help (Table A.7.#1)</i>
			P1: <i>Had an interesting conversation with ... on the stairs. Want to look at what is available in Pearsons in depth before I start developing. ... example of a string of beads is very relevant. (Table A.7.#3)</i>

Participant 1 mentioned asking fellow partners for help as a coping strategy in mastering the use of Blogger. This participant also referred to a discussion with the instructional designer as being relevant to the development of course material.

4.3.3.1.2 Category 2: Ask for people's opinions

Table 4.49 presents reasoning on asking for people's opinions.

Table 4.49 Ask for people's opinions

Theme	Sub-theme	Category	Quotation
3	Support seeking strategies	Ask for people's opinions	P1: <i>Need to get the lecturers in the subject on all campuses to buy into programme. Have to ask for their inputs (Table A.7.#2).</i>

Participant 1 commented on the need to convince other lecturers on all the campuses to buy into the programme and to ask for their input in the development of course material.

Despite the fact that help from the instructional designers constituted part of the programme, participants 7 and 10 did not mention the use of support seeking coping strategies.

4.3.3.4 Sub-theme 4: Distracting actions

Distracting actions entail doing something in order to avoid thinking about the situation that is perceived as problematic.

4.3.3.4.1 Category 1: Vent frustration

Table 4.50 deals with venting frustration as a coping strategy.

Table 4.50 Vent frustration

Theme	Sub-theme	Category	Quotation
3	Distracting actions	Vent frustration	P1: <i>Blogger: Felt heard. It was good to let go of frustrations and emotions (Table A.4.#1)</i>

Participant 1 made use of Blogger to vent frustrations and air emotions. In writing about frustrations participant 1 made use of distracting actions as a functional coping strategy.

4.3.3.5 Sub-theme 5: Avoidant actions

The use of avoidant actions as a coping strategy enabled participants to make an effort to stay away from the problem.

4.3.3.5.1 Category 1: Blaming other factors

Quotes relating to assigning blame to other factors as a reason for not coping are presented in table 4.51.

Table 4.51 Blaming other factors

Theme	Sub-theme	Category	Quotation
3	Avoidant actions	Blaming other factors	P1: <i>... was in my office on Wednesday and my computer settings have only been changed by our assistant today. Could thus not work on Wednesday and Thursday. Two days wasted and I am so slow! I want to scream with frustration. It means I will have to come into the office over the weekend. It also means that, if I struggle, I cannot phone the mentors as it is a weekend. I am becoming quite depressed (Table A.5.#1).</i>
			P7: <i>Blogger: I was ...and could not remember the password even though I wrote it down, I kept on losing it and forgetting. I did however write my Blogs down on the program page which was handed out each week. I was <u>very (underlined heavily)</u> frustrated by not being able to get into Blogger (Table G.4.#9).</i>

What is significant here is the way in which these participants refrain from taking responsibility, and blame circumstances for their inability to cope.

4.3.3.5.2 Category 2: Do something else or use another option

Table 4.52 present quotes pertaining to doing something else or using another option.

Table 4.52 Do other things or use another option

Theme	Sub-theme	Category	Quotation
3	Avoidant actions	Do other things or use another option	P1: Video conferencing: Found it ineffective so rather tried to spend time on items I found effective (Table A.5.#5).
			P1: Video conferencing: Don't mind others using it. Me not. Will rather travel for the of camera interaction which is often more useful (Table A.5.#7).

Participant 1 perceived video conferencing as ineffective and stated the intention not to use it. This participant would rather travel than use the technology.

4.3.3.5.3 Category 3: Did not use the technology

Table 4.53 contains quotes relating to giving reasons for not using a technology.

Table 4.53 Did not use the technology

Theme	Sub-theme	Category	Quotation
3	Avoidant actions	Did not use the technology	P7: There are a couple of Technologies like Camtasia, Perception and Blogger that did not want to work as described by the instructors. They frustrated me (Table G.4.#6)
			P1: Corel draw: Lost, haven't a clue (Table A.5.#8)
			P10: Video: Nog nie gebruik (Table J. 4.#2).
			P10: Video: Voel nie die nodigheid vir my vak om te gebruik (Table J. 4.#4).
			P10: Perception: Nie van toepassing op my vakgebied nie- het dit ook nie gebruik nie (Table J. 4.#3).
			P10: Perception: Nog nie bemeester nie (Table J. 4.#1).
			P10: Video conferencing: Voel dis nie nodig om te gebruik in my vak nie (Table J. 4.#5).

Participant 7 cited Camtasia, Video and Blogger as technologies not used, and indicated frustration that the technologies had not worked as expected. Participant 1 had had negatives experiences of CorelDraw, and felt totally lost with no idea of how to use it. Participant 10 named Video, Perception and Video conferencing as technologies not used as this participant did not perceive these technologies to be useful. Note the negative feelings – could negative perception and avoidant actions as a coping strategy be linked to lower emotional intelligence?

4.3.3.5.4 Category 4: Stop using the technology

Table 4.54 pertains to reasoning as to why a technology was no longer used.

Table 4.54 Stop using the technology

Theme	Sub-theme	Category	Quotation
3	Avoidant actions	Stop using the technology	P10: <i>Blog: Gebruik nie meer- dink dit is nie meer nodig</i> (Table J. 4.#6).

Participant 10 had stopped blogging, and gave as a reason for this the fact that it was no longer necessary.

4.3.3.6 Sub-theme 6: Repression

Repression as a coping strategy means that participants try to put the problem out of their minds and not think about it.

4.3.3.6.1 Category 1: Blotted it out

Table 4.55 presents quotes dealing with blotting out thoughts about a perceived problem.

Table 4.55 Blotted it out

Theme	Sub-theme	Category	Quotation
3	Repression	Blotted it out	P1: <i>Camtasia: Blotted it out as I found it above me, together with the other information overload</i> (Table A.6.#2)

Feeling lost and out of depth participant 1 blotted out all thoughts of Camtasia. The

question arises as to how negative emotional experiences are linked with avoidance coping strategies and EI?

4.3.3.6.2 Category 2: Ignore the technology

Table 4.56 illustrates the coping strategy of simply ignoring the problem.

Table 4.56 Ignore the technology

Theme	Sub-theme	Category	Quotation
3	Repression	Ignore the technology	P1: <i>Perception: Ignored it – spent my time on things I could do and rather mastered them (Table A.6.#3).</i>

Participant 1 had perceived Perception negatively and so simply ignored it and spent time on elements perceived as user friendly.

4.3.3.7 Summary: Theme 3

Participants in the group in theme 3 made use of problem focused coping strategies when the technology had been perceived as user friendly. Avoidance coping strategies were used if the technology were perceived as too difficult or not necessary for a particular course. What is significant in this group of participants is the lack of positive reconstructive coping strategies.

The next section of the chapter contains a summary of the emotional intelligence scores of participants as measured by the emotional intelligence instrument, MSCEIT™.

4.4 Emotional intelligence scores

Emotional intelligence scores consist of three different scores, namely, a total score, two area scores and four branch scores. The scores are interpreted in a qualitative way as is illustrated in table 4.57.

Table 4.57 Qualitative range of EI scores

EI Score	Qualitative range
69 or less	Consider development
70-89	Consider enhancement
90-99	Average score
100-109	High average score
110-119	Effective functioning
120-129	Strength
130+	Significant strength

Colour codes for the different ranges have been used to assist in categorising the scores.

4.4.1 Total score

The total score of participants are given in table 4.58.

Table 4.58 Total EI scores

Emotional Intelligence scores	Participants									
	1	2	3	4	5	6	7	8	9	10
Total	85	108	97	88	98	90	92	100	84	95

From table 4.3 it is evident that the total EI scores fall into three qualitative ranges, namely *consider enhancement*, *average score* and *high average score*. The scores of participants 1, 4 and 9 fall within the *consider enhancement* range. The scores of five of the participants, 3, 5, 6, 7 and 10, fall within the *average score* range. Two of the participants only, 2 and 8, have total scores in the *high average score* range.

4.4.2 Area scores

Area scores consist of two different scores, namely, experiential and strategic.

4.4.2.1 Experiential

Scores of the experiential area are presented in table 4.59.

Table 4.59 Experiential area scores

Emotional Intelligence scores		Participants									
		1	2	3	4	5	6	7	8	9	10
Area	Experiential	88	117	103	85	102	89	107	113	81	108

The experiential area scores comprise three different qualitative ranges. The scores of participants 1, 4, 6 and 9 fall into the *consider enhancement* range. The scores of participants 3, 5, 7 and 10 fall into the *high average score* range. Again the scores of two participants only, 2 and 8, fall into the *effective functioning* range.

4.4.2.2 Strategic area scores

Table 4.60 represents the strategic area scores of the participants.

Table 4.60 Strategic area scores

Emotional Intelligence scores		Participants									
		1	2	3	4	5	6	7	8	9	10
Area	Strategic	86	95	92	94	91	93	83	89	90	85

The strategic area scores consist of two qualitative ranges. The scores of participants 1, 7, 8 and 10 fall into the *consider enhancement* range. The remainder of the participants, 2, 3, 4, 5, 6, and 9 have strategic score in the *average score* range.

4.4.2 Branch scores

Branch scores consist of perceiving emotion, facilitating emotion, understanding emotion and managing emotions.

4.4.2.1 Perceiving emotion

The branch scores for perceiving emotion are presented in table 4.61.

Table 4.61 Perceiving emotion scores

Emotional Intelligence scores		Participants									
		1	2	3	4	5	6	7	8	9	10
Branch	Perceiving	90	108	100	77	112	90	104	110	90	109

The perceiving emotion scores of the participants fall into four different ranges. The only score in the *consider enhancement* range is that of participant 4. The scores of participants 2, 3, 5, 7 and 10 fall into the *high average* range. Participant 8 only has a perceiving emotion score in the *effective functioning* range.

4.4.2.2 Facilitating emotion

The branch scores for facilitating emotion are presented in table 4.62.

Table 4.62 Facilitating emotion scores

Emotional Intelligence scores		Participants									
		1	2	3	4	5	6	7	8	9	10
Branch	Facilitating	88	121	105	102	90	90	108	112	78	101

The facilitating emotion scores of the participants comprise five different qualitative ranges. The scores of participants 1 and 9 fall within the *consider enhancement range*. The scores of participants 5 and 6 are within the *average score* range. Participants 3, 4, 7 and 10 have scores in the *high average* range. The facilitating emotion scores of participants 8 and 2 are in the *effective functioning* and *strength* range respectively.

4.4.2.3 Understanding emotion

The branch scores for understanding emotion are presented in table 4.63.

Table 4.63 Understanding emotion scores

Emotional Intelligence scores		Participants									
		1	2	3	4	5	6	7	8	9	10
Branch	Understanding	81	96	93	91	92	100	91	103	90	77

The understanding emotions scores of the participants fall within three qualitative ranges. Participants 1 and 10 have scores in the *consider enhancement* range. The

scores of participants 2, 3, 4, 5, 7, and 9 fall within the *average score* range. The scores of participants 6 and 8 only are in the *high average* range.

4.4.2.4 Managing emotions

The branch scores for managing emotions are presented in table 4.64.

Table 4.64 Managing emotions scores

Emotional Intelligence scores		Participants									
		1	2	3	4	5	6	7	8	9	10
Branch	Managing	96	98	94	100	93	91	81	83	93	101

Managing emotions scores encompass three qualitative ranges. The scores of participants 7 and 8 are within the *consider enhancement* range. Participants 1, 2, 3, 5, 6, and 9 have scores in the *average score* range, while the scores of participants 4 and 10 in the *high average score* range.

4.4.4 Summary of EI scores

Table 4.65 provides a summary of the EI scores of the participants.

Table 4.65 Summary of EI scores

Emotional Intelligence scores		Participants									
		1	2	3	4	5	6	7	8	9	10
Total		85	108	97	88	98	90	92	100	84	95
Area	Experiential	88	117	103	85	102	89	107	113	81	108
	Strategic	86	95	92	94	91	93	83	89	90	85
Branch	Perceiving	90	108	100	77	112	90	104	110	90	109
	Facilitating	88	121	105	102	90	90	108	112	78	101
	Understanding	81	96	93	91	92	100	91	103	90	77
	Managing	96	98	94	100	93	91	81	83	93	101

From the table it is evident that there is great variation in the individual scores of the participants and no obvious groupings are evident. The next section presents the emotional intelligence scores of the participants in terms of the Emotional Coping Hierarchy according to Salovey and colleagues (1999).

4.5 Emotional Coping Hierarchy

Salovey and colleagues developed a hierarchy of emotional competencies to “facilitate the application of emotional intelligence to the coping process” (Salovey *et al.*, 1999, p. 146). Included in this hierarchy are the competencies of emotional intelligence most relevant to the coping process as adapted by the researcher and discussed in chapter 2 §2.8. Figure 4.6 provides an illustration of the relevant competencies of emotional intelligence in the emotional coping hierarchy used in this study.

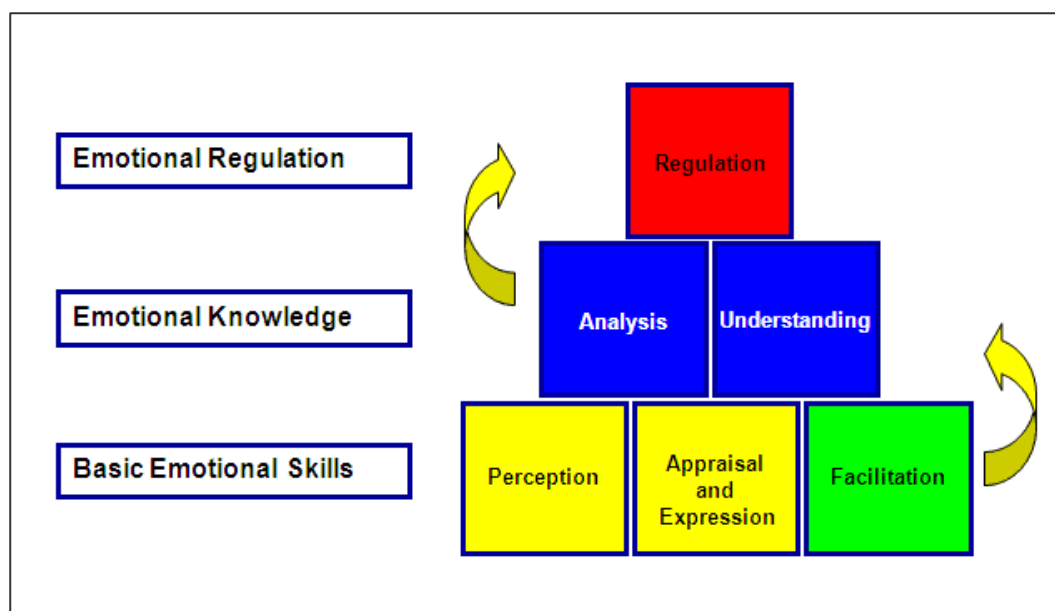


Figure 4.6 The Emotional Coping Hierarchy

Source: Adapted from (Salovey *et al.*, 1999, p. 146).

The basic emotional intelligence skills of perception, appraisal, expression and facilitation are on the first level of the emotional coping hierarchy. Understanding and analysis, which, according to Salovey *et al.* (1999), are more sophisticated subcomponents of emotional knowledge, are on the second level. Emotional regulation is placed on the third level. In order for successful coping to take place the authors believe that the “*entire* hierarchy of emotional coping skills must be successfully developed and employed” (Salovey *et al.*, 1999, p. 146) (my emphasis).

The next section deals with the Emotional Coping Hierarchy of each participant in the three different groupings according to the themes.

4.5.1 Group 1

Group 1 consisted of participants 2, 3, 4, 6 and 8. These participants belonged to theme 1 of the results and made use of positive coping strategies and no negative coping strategies.

4.5.1.2 Participant 2

Figure 4.7 illustrates the Emotional Coping Hierarchy of participant 2.

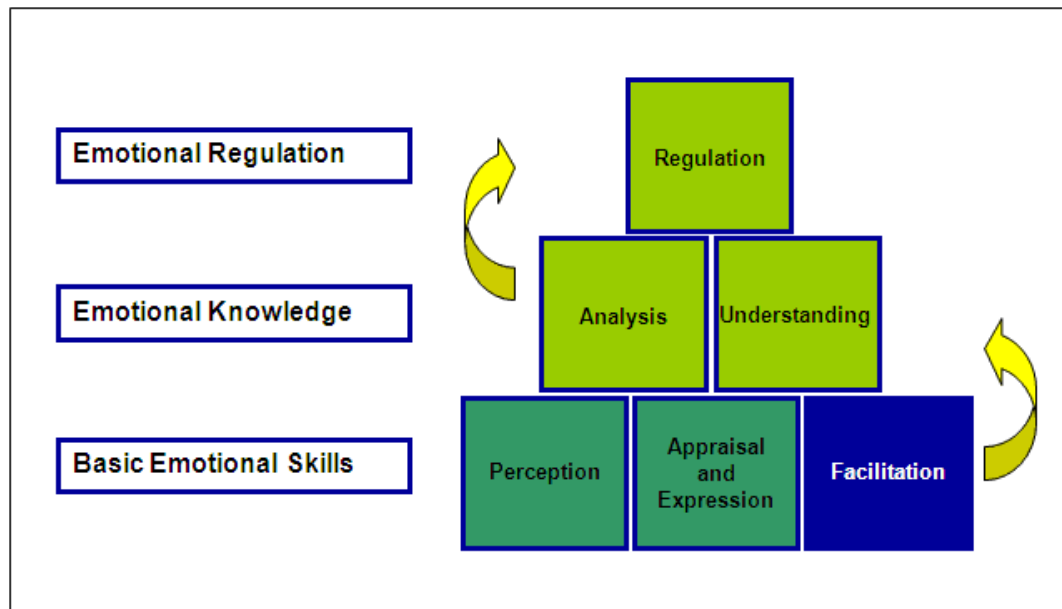


Figure 4.7 Emotional Coping Hierarchy: Participant 2

The first level of the Emotional Coping Hierarchy of participant 2 falls within the qualitative range of a *high average* and *strength* emotional intelligence score, with the second and third levels in the *average* score range. According to the model of Salovey and colleagues (1999) this participant should possess adequate emotional intelligence skills and therefore be able to cope adequately with the mastering of new educational technologies.

4.5.1.3 Participant 3

Figure 4.8 illustrates the Emotional Coping Hierarchy of participant 3.

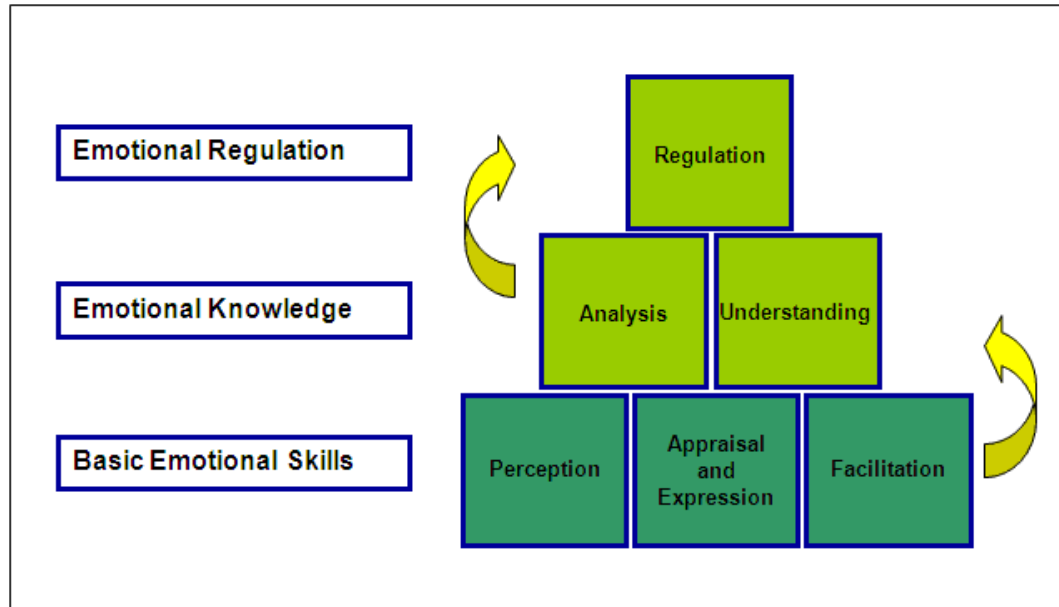


Figure 4.8 Emotional Coping Hierarchy: Participant 3

The first level of the Emotional Coping Hierarchy of participant 3 falls within the qualitative range of a *high average* emotional intelligence score, with the second and third levels in the *average* score range. According to the model of Salovey and colleagues (1999) participant 3 should have adequate emotional intelligence skills and therefore be able to cope satisfactorily with the mastering of new educational technologies.

4.5.1.4 Participant 4

Figure 4.9 illustrates the Emotional Intelligence Hierarchy of participant 4.

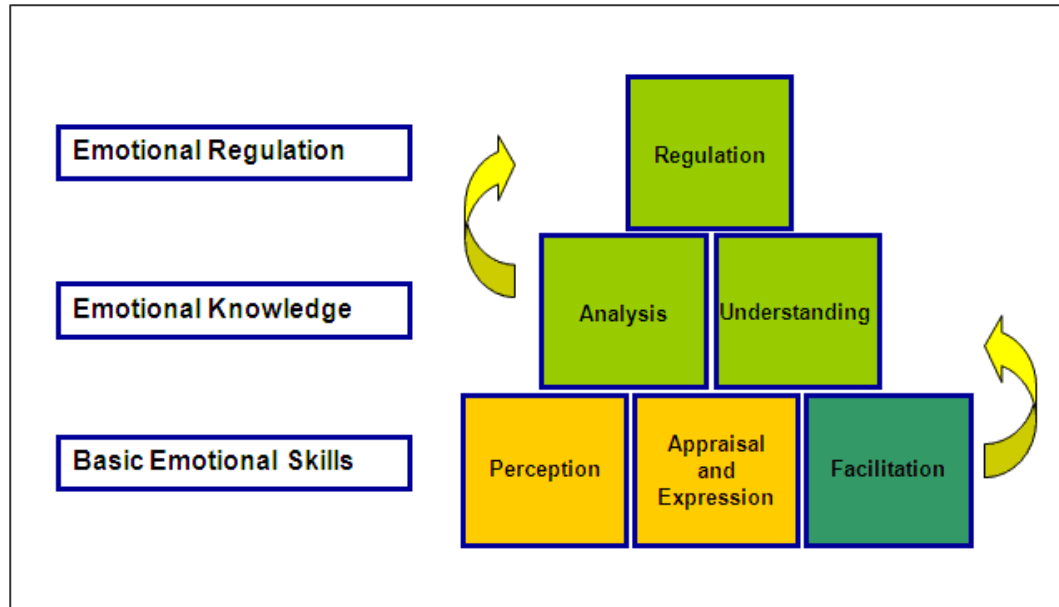


Figure 4.9 Emotional Coping Hierarchy: Participant 4

In the first level of the Emotional Coping Hierarchy of participant 4, Perception, Appraisal and Expression falls within the qualitative range of a *consider enhancement*, Facilitation falls within the range of *strength* emotional intelligence score, with the second and third levels in the *average* score range. According to the criteria set by Salovey and colleagues (1999) the first level of the Emotional Intelligence Hierarchy of this participant is not fully developed and thus, theoretically, this participant should have problems in coping adequately with the mastering of new educational technologies.

4.5.1.5 Participant 6

Figure 4.10 illustrates the Emotional Coping Hierarchy of participant 6.

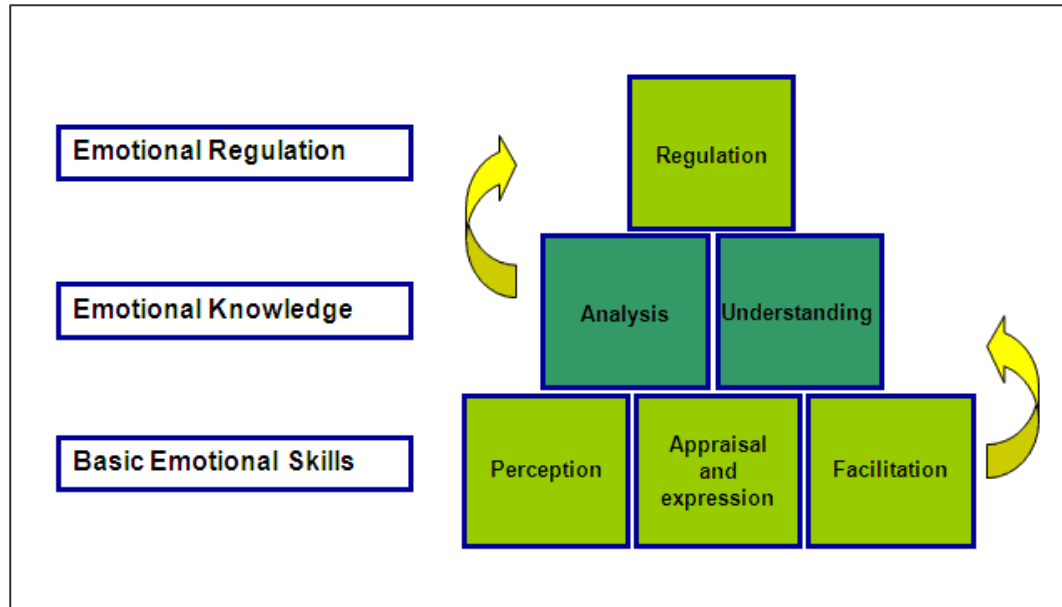


Figure 4.10 Emotional Coping Hierarchy: Participant 6

The first and third level of the Emotional Coping Hierarchy of participant 6 falls within the qualitative range of an *average* emotional intelligence score, with the second level in the *high average* score range. According to the model of Salovey and colleagues (1999) participant 6 should possess adequate emotional intelligence skills and therefore be able to cope satisfactorily with the mastering of new educational technologies.

4.5.1.6 Participant 8

Figure 4.11 illustrates the Emotional Coping Hierarchy of participant 8.

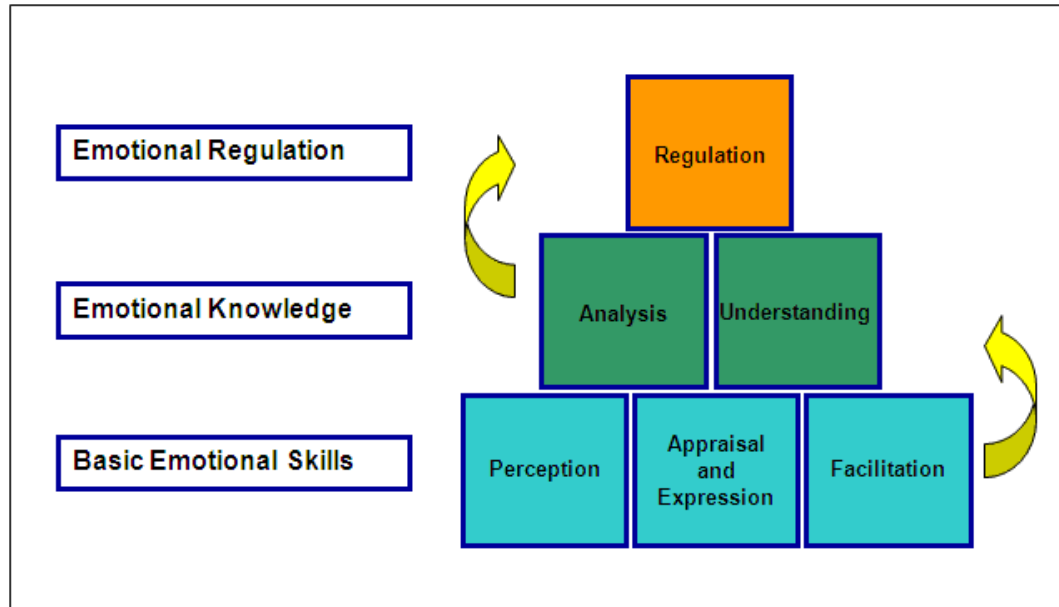


Figure 4.11 Emotional Coping Hierarchy: Participant 8

The first level of the Emotional Coping Hierarchy of participant 8 falls within the qualitative range of *effective functioning* emotional intelligence score, with the second level in the high average score range. The third level falls within the qualitative range of a *consider enhancement* emotional intelligence score. Although the first two levels fall within the higher qualitative EI ranges, theoretically participant 8 should experience problems coping with new educational technologies as, according to the model of Salovey and colleagues (1999), the third level of emotional regulation is not adequately developed.

The next section contains a discussion on the Emotional Intelligence Hierarchy of the participants in the second group.

4.5.2 Group 2

Group 2 consisted of participants 5 and 9. This group of participants made use of positive and negative coping strategies.

4.5.2.1 Participant 5

Figure 4.12 illustrates the Coping Hierarchy of participant 5.

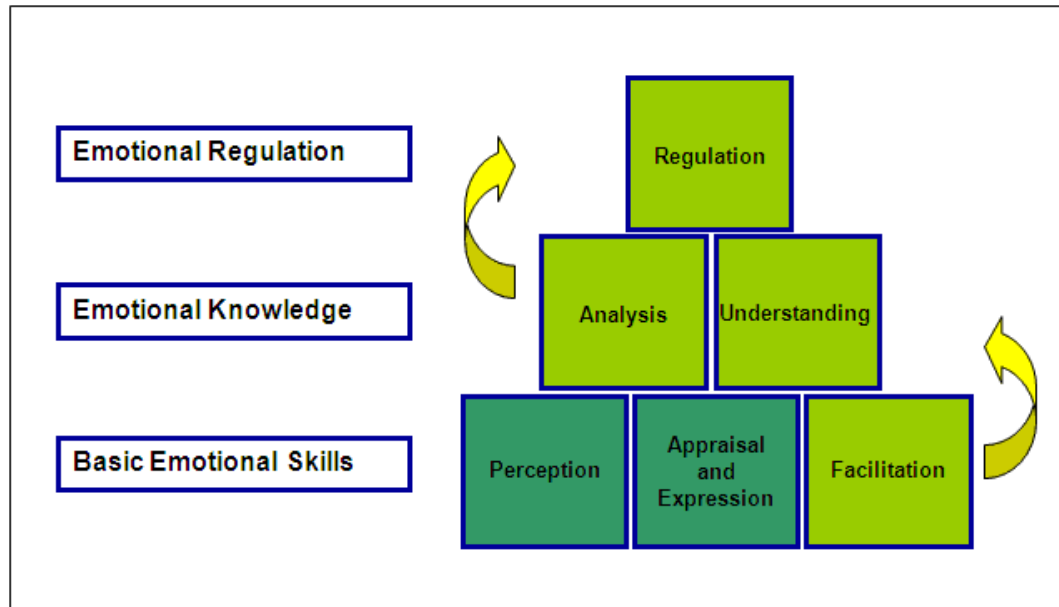


Figure 4.12 Emotional Coping Hierarchy: Participant 5

The first level of the Emotional Coping Hierarchy of participant 5 falls within the qualitative range of a *high average* and *average* emotional intelligence score, with the second and third levels in the *average* score range. According to the model of Salovey and colleagues (1999) participant 5 should possess adequate emotional intelligence skills and therefore be able to cope satisfactorily with the mastering of new educational technologies.

4.5.2.2 Participant 9

Figure 4.13 illustrates the Emotional Coping Hierarchy of participant 9.

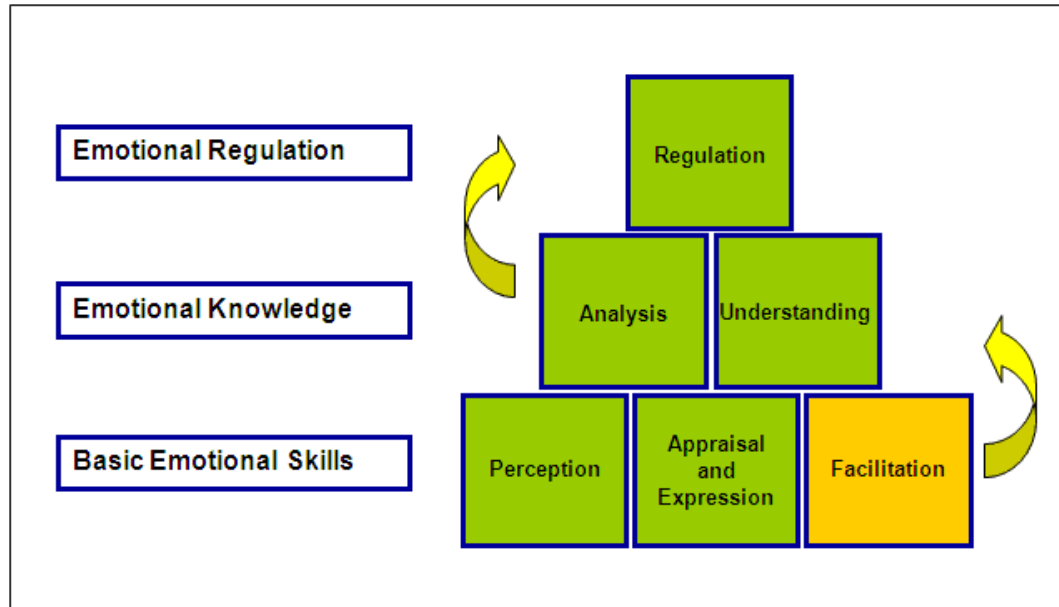


Figure 4.13 Emotional Coping Hierarchy: Participant 9

All the levels of the Emotional Coping Hierarchy of participant 5 fall within the qualitative range of the *average* emotional intelligence score, with the exception of Facilitation, which is on the *consider enhancement* level. According to the model of Salovey and colleagues (1999) the fact that all the levels are not adequately developed means the participant may have problems in coping adequately with the mastering of new educational technologies.

4.5.3 Group 3

Group 3 consisted of participants 1, 7 and 10. This group fell under theme 3 and used negative coping strategies and no positive coping strategies.

4.5.3.1 Participant 1

Figure 4.14 illustrates the Emotional Coping Hierarchy of participant 1.

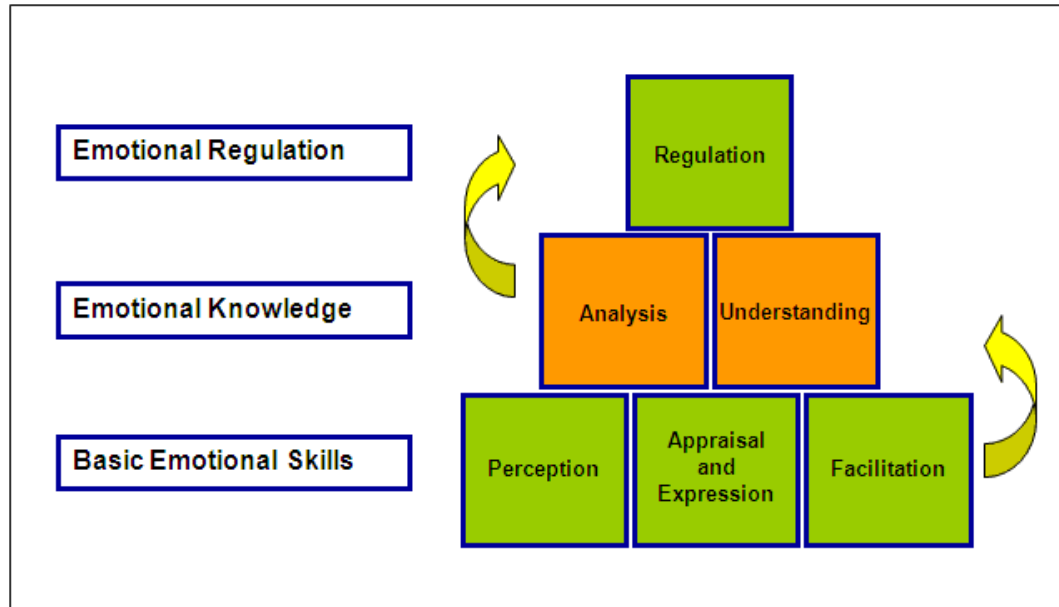


Figure 4.14 Emotional Coping Hierarchy: Participant 1

The first and third levels of the Emotional Coping Hierarchy of participant 1 fall within the qualitative range of an *average* emotional intelligence score, with the second level in the *consider enhancement* score range. As the second level of the Emotional Intelligence Hierarchy of this participant is, according to the criteria set by Salovey and colleagues (1999), not completely developed this participant will, theoretically, have problems in coping adequately with the mastering of new educational technologies.

4.5.3.2 Participant 7

Figure 4.15 illustrates the Emotional Coping Hierarchy of participant 7.

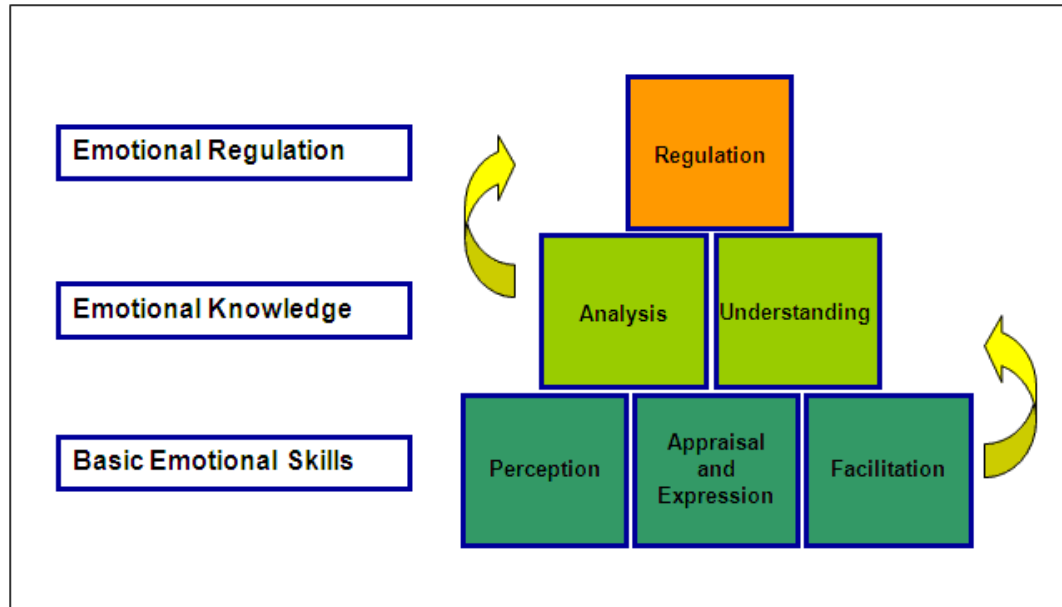


Figure 4.15 Emotional Coping Hierarchy: Participant 7

The first level of the Emotional Coping Hierarchy of participant 7 falls within the qualitative range of a *high average* emotional intelligence score, with the second level in the *average* score range. The third level, emotional regulation, falls in the *consider enhancement* range. As the third level of the Emotional Intelligence Hierarchy of this participant is, according to the criteria set by Salovey and colleagues (1999), not completely developed this participant will, theoretically, have problems in coping adequately with the mastering of new educational technologies.

4.5.3.3 Participant 10

Figure 4.16 illustrates the Emotional Coping Hierarchy of participant 10.

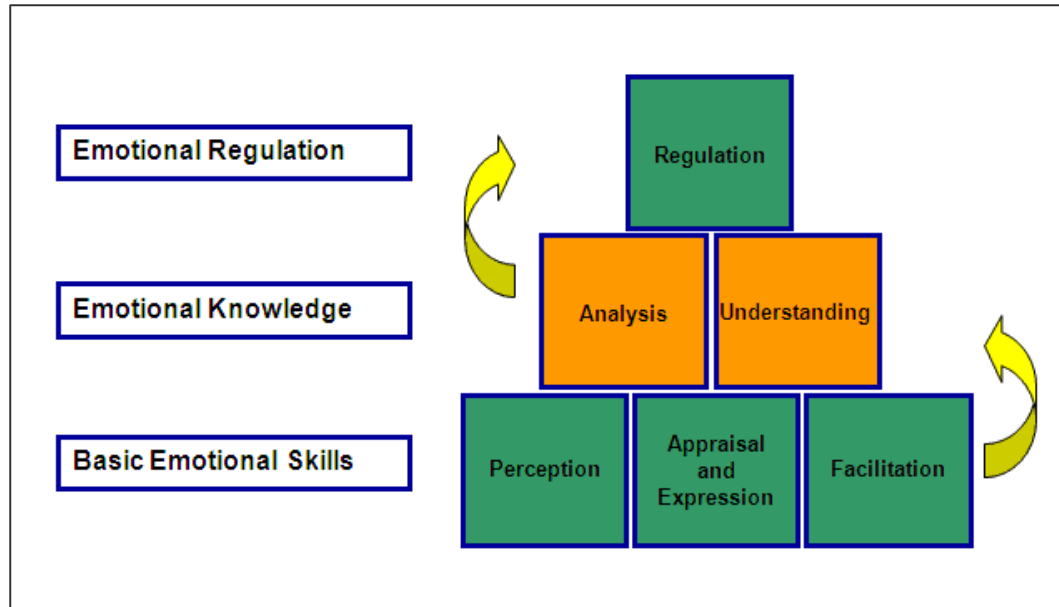


Figure 4.16 Emotional Coping Hierarchy: Participant 10

The first and third levels of the Emotional Coping Hierarchy of participant 10 fall within the qualitative range of a *high average* emotional intelligence score, with the second level in the *consider enhancement* score range. As the second level of the Emotional Intelligence Hierarchy of this participant is, according to the criteria set by Salovey and colleagues (1999), not completely developed, this participant will, theoretically, have problems in coping adequately with the mastering of new educational technologies.

The next chapter will explore linkages between coping strategies and EI scores in conjunction with the Emotional Coping Hierarchy according to Salovey *et al.*(1999).

4.5 Summary of chapter

This chapter presented the qualitative results of the document analysis, using Atlas.ti™, and the quantitative results from the emotional intelligence test, MSCEIT™. An attempt was made to gain an understanding of the emotions, reasoning and coping strategies of participants in the mastering of new educational technologies. The next chapter will present the trends regarding linkages between emotional intelligence and coping strategies.

Chapter 5: Trends regarding linkages between emotional intelligence and coping strategies

*Out of the marriage of reason with affect there issues clarity with passion.
Reason without affect would be impotent, affect without reason would be blind.*
Silvan S. Tomkins

5.1 Introduction

The previous chapter contained a discussion on the coping strategies used by the participants in the study as well as their emotional intelligence scores. This chapter deals with the third sub-question:

What are the trends regarding linkages between emotional intelligence and the coping strategies used by participants?

Using the first two sub-questions addressed in the previous chapter, this chapter aims to answer the main research question:

What are the linkages between emotional intelligence and coping strategies when mastering new educational technologies?

The chapter starts with an exploration of the main trends of the study. This is followed by a comparison of the emotional intelligence skills demonstrated by the participants together with their predicted emotional intelligence skills according to Salovey *et al.* (1999). The chapter concludes with a summary of the findings of the study.

5.2 Main trends

Individuals differ in the way they cope with stressors and hence their coping strategies also differ (Salovey *et al.*, 1999). Five main trends became apparent from the results of this study in terms of the coping strategies employed.

In this section the main trends which emerged from the results of the study are discussed, and the Emotional Coping Hierarchy of specific participants is compared with the coping strategies used with the aim of seeking possible associations between

the coping strategies employed and emotional intelligence in the context of the Partners@Work programme.

With the use of Atlas.ti™ as described in chapter 3, § 3.6.1.2 a frequency table was compiled of codes per participant relating to the coping strategies employed. As was previously stated what is important in this regard is that the study is biased towards the verbal and narrative accounts, as less verbal participants did not blog as much as the more verbal participants. Table 5.1 presents the frequency table of codes per coping strategy as a refinement of the coping strategies used by the participants which were presented in table 4.1.

Table 5.1 Frequency table: all coping strategies

Participants	Problem-focused coping strategies			Positive coping strategies				Negative coping strategies			Social coping strategies	Total
	Cognitive decision making	Direct problem solving	Seeking understanding	Positivity	Control	Optimism	Humour	Distraction actions	Avoidant actions	Repression	Support seeking	
1	8	6						1	8	4	3	30
2	21	10	14	8		15	6				11	85
3	19	20		14	2	12					14	81
4	4	7	1	3		3					5	23
5	15	7		4	1				6		11	44
6	13	16		10		4					8	51
7	4	5							9			18
8	21	3	17	5		1	6				8	61
9	7	6				1			2		2	18
10	1	8							6			15
Total	121	88	32	44	3	36	12	1	31	4	62	426
	121	88	32	95				36			62	

The following trends emerged from an analysis of the narratives of participants given in chapter 4 and the frequency of codes pertaining to the coping strategies used as displayed in table 5.1. These trends comprise the use of cognitive decision-making coping strategies on the part of all participants, direct problem solving coping strategies in those cases where the participants perceived that they possessed the necessary skills to master the technology adequately, the use of positive and negative coping

strategies in stressful situations, emotional disclosure using Blogger as a reflective journal and lastly social networking during the Partners@Work programme. In an effort to find associations between EI and coping strategies these trends were combined and comparisons made with factors pertaining to resilience and emotional intelligence.

5.2.1 Trend 1: Perceiving ability as adequate

A trend pertaining to all the participants in the three different groups relevant to the three themes as discussed in chapter 4 (§ 4.3) was *that, in the event of perceiving the technology to be user-friendly, participants experienced less stress with accompanying positive affect*. It would appear that, in times of perceived self-efficacy, participants made use of direct problem-solving coping strategies as they felt confident about their ability to use and apply the particular technology (§ 4.3.1.2, § 4.3.2.2 and § 4.3.3.2). This corresponds with benign-positive appraisal (Lazarus & Folkman, 1984, p. 152) in terms of which the individual appraises the outcome of a situation as positive, and thus experiences pleasant emotions. In a case such this the individual will experience either relatively little or even no stress, and emotional intelligence in relation to the handling of stressful situations will not come into play. Participants typically expressed ease of use and usefulness in terms of using a particular technology.

Respondus: Great, this was the answer to my dreams. The program did exactly what I wanted. Easy to operate and upload to WebCT¹² (Table G.3.#4).

This perceived self-efficacy corresponds with the self-efficacy theory of Bandura (1997) according to which the beliefs that individuals hold about their ability to organise and perform tasks determine their expectations of the consequences of the actions taken. These self-efficacy beliefs of participants are also supported by the research of Carr (2004, p. 212). Carr posits that self-efficacy beliefs control functioning through cognitive, emotional and motivational processes. On the cognitive level, participants with high perceived self-efficacy focus on beneficial prospects, as is exemplified in the following quote:

Respondus is user friendly and most of the Partners reacted positively towards its capabilities. It was enlightening that multiple-choice, which may be regarded by some as a “monkey-puzzle” with little educational value, turned out to be quite the opposite. I believe that this programme has the ability to accurately test the students’ knowledge (Table H.9.#7).

¹² It is notable that the particular participant seemingly had problems coping effectively with some of the other technologies.

It would appear that self-efficacy beliefs contributed to the regulation of emotional states by facilitating problem-focused coping and promoting the use of social support as a safeguard against stress. This is illustrated by the following narrative:

Some [technologies] was easier than others. I have spent more time on practicing those that I found harder and also sought help from my ID and other partners if necessary (Table D.3.#2).

On the motivational level, self-efficacy beliefs seemed to contribute to participants remaining positive and motivated. This is aptly described by participant 3:

I've heard the following saying some time ago that meant a lot to me, and hopefully to everyone reading this blog: "Excellence and beauty come from passionately, motivated people". So, that's what I'm going to strive for in the coming days and weeks. (Table C.5.#5).

As “resilient self-efficacy develop from mastery experiences in which goals are achieved through perseverance and overcoming obstacles” (Carr, 2004, p. 211) it is the opinion of the researcher that the role of the facilitator in the process of mastering new educational technologies is vital. Carr asserts that the individual’s self-efficacy beliefs may be strengthened by convincing individuals that they are capable of success and then by assisting them by setting manageable challenges to confirm their expectations (Carr, 2004). Thus, it is postulated that the challenge to the facilitators of programmes introducing new technologies may be to guide and assist in the mastering of the technologies in such a way that resilient self-efficacy is given a chance to develop.

5.2.2 Trend 2: Use of cognitive decision-making as a coping strategy

As is evident from table 5.1 *all the participants in the three different groups (§ 4.3) made use of cognitive decision-making as a coping strategy.* What is significant in this instance is the use of the category *Enhancing teaching and learning*, in terms of which all the participants from the different groups linked the use of a specific technology to their own particular field, and commented positively on the way in which the use of the different technologies may enhance the teaching and learning process.

What becomes obvious within the use of this particular coping strategy is that there is a *repetition of the trend that in cases where a technology is perceived as user friendly participants experience less stress, and thus positive affect (§ 4.3.1.1, § 4.3.2.1 and § 4.3.3.1).* This is also in accordance with benign-positive appraisal (Lazarus & Folkman,

1984) in terms of which participants appraise the outcomes of using the technology as positive.

Differences in the behaviour of participants in the different groups appeared when the situation was appraised as stressful. This correlates with research findings that individuals differ in the way they appraise and integrate stressors (Ashkanasy, Ashton-James, & Jordan, 2004; Folkman & Moskowitz, 2004; Lazarus, 1999; Lazarus & Folkman, 1984). These stressors are either positively evaluated as a challenge, or negatively as threat.

Participants in **Group 1** (§ 4.3.1.1) reacted positively to stressors such as problems with certain of the technologies, and the facilitation of the programme. Their challenging reaction to these stressors varied from devising alternative, creative ways to solving their problems with the mastering of a technology to communicating ideas on ways in which the instructional designers could enhance the facilitation process. What is significant is the positive manner in which these participants conveyed their thoughts about ways to improve the programme. The participants illustrated meta-cognitive thinking skills in their creative use of alternative solutions to problems, their suggestions of other ways of facilitating the Partners@Work programme, and their reasoning about the validity of using a specific technology. The participants displayed the ability to cope adaptively with mastering stressful situations in accordance with the belief of Salovey and colleagues (Salovey *et al.*, 1999).

Participants in **Group 2** (§ 4.3.2.1) used mainly cognitive decision-making coping strategies to comment on factors or situations they perceived as a hindrance in the process of mastering the new technologies. The issue of too much homework received frequent attention (§ 4.3.2.1b) and it would appear that participant 5 kept focusing on negative thoughts, and ruminated about the negative effects of too much homework. Both participants in Group 2 expressed dissatisfaction with the way in which some of the sessions had been facilitated, and felt that not enough time had been allocated to mastering a specific technology before proceeding to the next technology to be mastered. Salovey *et al.* consider that the “successful processing of intrusive thoughts may depend on skills related to the activation, experience, and modification of feelings” — higher order emotional intelligence abilities (1999, p. 148).

These participants appear to lack the self-efficacy beliefs that could, according to Carr (2004, p. 212), regulate emotional states, and help them “to interpret potentially

threatening demands as manageable challenges and reduce worrying and negative thinking about potential threats”.

In the case of participants in **Group 3** (§ 4.3.3.1) the difference in positivity between this group and the participants in Group 1 became obvious when the participants in Group 3 voiced their suggestions on ways to improve the facilitation of new technologies. As with the participants of Group 2, the participants of Group 3 also lacked the self-efficacy beliefs that could have assisted them in interpreting potentially threatening demands in a more positive light as challenges they were able to meet (Carr, 2004).

This again leads to the postulation that the role of the facilitator must not be underestimated in the process of mastering new educational technologies. If participants do lack self-efficacy beliefs it may be possible to strengthen these beliefs if the individuals were to be persuaded that they do have the ability to succeed by means of interventions on the part of the facilitator, who could hand out manageable amounts of work, and guide their every step in the process of mastering the new technology.

5.2.3 Trend 3: Perceiving the situation as stressful

The third trend in the results relates to the way in which participants reacted to and coped with a situation they perceived as stressful. What emerged from the data is the dichotomy that exists between ways of coping with stressful encounters. One way of coping with stressful situations was by using positive coping strategies, and the other was by way of negative coping strategies.

5.2.3.1 Negative coping strategies

Negative coping strategies include avoidant actions, repression and distracting actions. As seen in table 5.1, repression and distracting actions form a very minor part of these strategies, as was proved by the fact that one participant only made use of this type of strategy.

5.2.3.1.1 Repression and distraction strategies

One participant only made use of these coping strategies (§ 4.3.3.4 and § 4.3.3.6). It would seem that participant 1 perceived resources with which to cope with the technology as insufficient and thus made use of repression. In the case of distraction strategies participant 1 made use of distraction in a functional way by giving vent to frustration and emotions in Blogger.

5.2.3.1.2 Avoidant actions

Avoidant coping strategies were used by participants from **Group 2** (§ 4.3.2.7), as well as by participants from **Group 3** (§ 4.3.3.5).

The avoidant actions used by participants in **Group 3** consisted of blaming other issues for their inability to cope effectively. They avoided mastering the technology by not making any effort to use it (§ 4.3.3.5). These avoidant actions resulted in negative outcomes – participants did not cope with mastering specific technologies such as Camtasia, Perception and CorelDraw. What is noteworthy is that in instances where participants did not master a particular technology they perceived their ability to cope as inadequate. The narratives of these participants are characterised by negative emotive feelings such as feelings of loss, frustration and depression. This is reflected in the following excerpt:

Difficult, because I was used to using the computer as a typewriter. Many times I felt that a person who had some experience in the Technologies would have been a better option for the course. I felt intimidated and actually started feeling a lot of low esteem about myself, because the other partners seem to know a hell of a lot more than I (Table G.5.#6).

An interesting observation concerning the negativity of some of the participants in these two groups lies in their response to video conferencing. Participants 5 and 9 from **Group 2** and participant 1 from **Group 3** voiced their negativity about video conferencing. As stated earlier, this negativity reflects the way in which the presenter or facilitator of a particular technology is perceived by the participants. Could emotional intelligence not only play a role in coping with the mastering of a new technology, but also by influencing the way in which a particular technology would be perceived if presented in a less emotionally intelligent way?

These avoidant coping strategies are in accordance with the theory of ruminative coping of Salovey *et al.* (1999, p. 147). According to them, some individuals are prone to thinking excessively about a stressor, and focus on the negative aspects of distress. The outcome of rumination as a coping style tends to lead to greater difficulties in coping. Salovey *et al.* are of the belief that “successful processing of intrusive thoughts may depend on skills related to the activation, experience, and modification of feelings” (1999, p. 148).

One of the most sophisticated skills pertaining to the reflective moderation of emotion is deemed to be the ability to manage emotions by concentrating on positive emotions and restraining negative emotions (Mayer, 2001; Mayer & Salovey, 1997; Salovey *et al.*, 1999; Salovey & Mayer, 1990). Therefore, participants who engage in maladaptive coping strategies seem not to possess adequate skills to cope effectively. The use of avoidant coping strategies corresponds with the findings of various studies reported by Carver and Scheier (1999, p. 569) who reported that pessimists, in contrast with optimists, tend to “disengage from the goals with which the stressor is interfering” (Carver & Scheier, 1999, p. 569) by using avoidant coping strategies.

5.2.3.2 Positive coping strategies

Those participants who coped positively made use of creative cognitive thinking, optimism, positivity and humour. They took responsibility for finding a solution to the problem, and displayed resilience.

5.2.3.2.1 Creative cognitive thinking

When they experienced problems with a particular technology participants 2 and 4 demonstrated evidence of creative cognitive thinking (§ 4.3.1.1.1) by using alternative ways of solving their problems. This is in accordance with the skills pertaining to the second branch of emotional intelligence – the ability to move from negative feelings to positive feelings, and to use creative thought in solving problems (Mayer & Salovey, 1997; Mayer, Salovey, & Caruso, 2000c).

When participants 2, 4 and 8 used seeking understanding as a coping strategy they gave evidence of higher order cognitive thinking skills (§ 4.3.1.3) by trying to find meaning and obtain a better understanding of the situation. In accordance with the top level of the Emotional Intelligence Hierarchy (Salovey *et al.*, 1999) and the fourth

branch of emotional intelligence (Mayer, 2001; Salovey, 2006) – emotional regulation – these participants showed proof of an ability to integrate logic and emotion into the decision making process, thus facilitating successful coping.

5.2.3.2.2 Optimism

“Optimists are people who expect to have positive outcomes, even when things are hard” (Carver & Scheier, 2005, p. 233). Participants 2, 3, 4, 6, 8 and 9 exhibited optimism as a coping strategy in various situations (§ 4.3.1.6 and § 4.3.2.5) as is clear from the following quotation:

At first I was a little scared and even a little overwhelmed with the new technologies, since it was the first time that I have experienced it. I was, however, also excited at the prospect of exploring these technologies and becoming empowered. I realized that I will benefit in obtaining these skills and once I have started mastering these skills / technologies it felt like a huge accomplishment and value-added (Table D.6.#2).

These participants exhibited skills pertaining to understanding and analysing emotions, and used emotional knowledge in the sense that they appeared to possess the ability to concentrate on the positive effects and be optimistic about the outcomes of applying the different technologies (Mayer & Salovey, 1997; Salovey *et al.*, 1999; Salovey, Mayer, & Caruso, 2005).

5.2.3.2.3 Positivity

Participants 2, 3, 4, 5, 6 and 8 demonstrated an ability to view situations in a positive light, and to use positive emotions in an adaptive way in stressful situations, thus enabling them to cope with the mastering of new technologies (§ 4.3.1.4 and § 4.3.2.3). Contrary to some of the other participants who felt overwhelmed by all the homework, participant 3 remained positive and made use of self-motivation in order to cope.

At the end of Friday I felt a bit overwhelmed and stressed-out by all the assignments that we have to complete within the next few days. I will just have to keep my nerve, to not give up, and to work like hell!! (Table C.6#2).

Added at a later stage:

I want to keep going forward with the following motto: "Never give up" (Table C.6#1).

These participants showed evidence of an ability to manage their emotions by moderating negative emotions and concentrating on positive emotions, thereby enabling them to resist rumination (Salovey *et al.*, 1999).

5.2.3.2.4 Humour

Participants 2 and 8 made use of humour as a coping strategy (§ 4.3.1.7), and concentrated on the lighter side of the situation, thus relieving stress, as illustrated by the following excerpt:

Our previous lecture made me feel sorry for the way I sometimes run over new students. We started the lecture on e-portfolios with the term hyperlink. I was hoping that I would, during the lecture, come to understand the term. Alas, at the end of the lecture I had not progressed beyond the term hyperlink. I today still think that it has something to do with a "BAIE GROOT APTEEK" (Table H.7.#6).

The use of positive coping strategies concurs with studies reported by Carver and Scheier (1999, p. 570; , 2005, p. 235) regarding the differences between optimists and pessimists in respect of coping strategies. Indications from these studies are that optimists tend to make more use of problem-focused coping strategies, and are competent in devising creative plans when confronted with stressful situations. In the event of problem-focused coping strategies not being viable, optimists tend to use adaptive emotion-focused coping strategies, for instance, positive reframing, humour and acceptance (Carver & Scheier, 1999; Carver & Scheier, 2005). These writers maintain that these findings suggest that “optimists may have a coping advantage over pessimists, even in situations that cannot be changed” (Carver & Scheier, 2005, p. 235). The work of Fredrickson (Fredrickson, 2005; Fredrickson & Joiner, 2002; Fredrickson & Levenson, 1998; Fredrickson, Mancuso, Branigan, & Tugade, 2000; Fredrickson & Tugade, 2003) underscores the importance of positive emotions in optimal functioning.

Thus, it is proposed in this study that, in the process of facilitating the mastering of new educational technologies, the cultivation of positive emotions in accordance with Fredrickson (2005, p. 120) could bring into being optimal functioning.

5.2.4 Trend 4: Emotional disclosure

The analysis of the narratives of the participants which were then brought into context with the total frequency (Table 5.1) reveals that the trend pertaining to emotional disclosure makes a distinction between two groups of participants: one group which articulates emotions and feelings, and the other group seemingly unable or unwilling to express emotions and feelings in writing.

Participants 2, 3, 5, 6, and 8 demonstrated the ability to make sense of emotional experiences. As a prerequisite the participants must be able to appraise and express their own emotions, and define the meanings of the feelings (Salovey *et al.*, 1999). In accordance with the findings of Salovey *et al.* (1999, p. 148) those participants who were clear about the feelings experienced appeared to show less ruminative coping.

Salovey *et al.* (Salovey *et al.*, 1999) maintain that the ability to understand, analyse and regulate emotions will be reflected by individuals showing evidence of an ability to recognise that they are experiencing an emotion that requires a reaction in terms of emotional disclosure. This is illustrated in the following quote:

I am excited about the time that lies ahead. Excited, and scared, to develop a telematic programme that will meet expectations. Excited about professional growth. Excited about personal growth. Excited to take what I learn back to my dept and faculty to help, support and motivate them to also take up the telematic challenge. But, I'm also a bit scared. Scared that others might have such high expectations of me that I will not be able to meet. Scared that I will not meet my own high standards. Scared that I might get alienated from my Dept. I want to keep going forward with the following motto: "Never give up" (Table C.5.#1).

Salovey *et al.* (2005, p. 163) states that emotional disclosure provides the means to reflect upon and manage emotions, and this is central to emotional self-regulation. Individuals with insight and causal thinking skills will possess the ability to understand and analyse the emotions caused by a stressful experience. This is demonstrated by the following quote:

I was overwhelmed when first experiencing the features of [CorelDraw]. I did not feel we had enough training and was very unsure when I had to use this on my one. Once again I searched for a manual to explain the different features and had many trials before mastering some of the features. I feel there is a lot I still need to learn which can make life much easier and my courses more interesting (Table F.3.#4).

It is a limitation of this study that the narratives from written documents only could be analysed, as participants may have shared their feelings and experiences verbally. Therefore, it is only possible to draw conclusions pertaining to those participants who did articulate their emotions and feelings in writing.

Kerka (1996) notes the use of reflective journal writing as being of benefit in adult learning, and points out the stimulation provided by cognitive activities such as questioning, self-awareness, problem stating, problem solving, emoting and ideation. Phelps, Ellis and Stewart (2001, p. 481) believe that the use of metacognitive and reflective learning approaches may aid the development of capable computer users.

In a study on reflection reported at Online Educa (Kruger, 2005) it was found that very few participants reflected on a deeper level. This finding concurs with the findings of Phelps *et al.* when they discovered that a limitation in their study was the fact that certain journals lacked reflective insights (2001, p. 488). They conclude that the level and depth of reflective engagement are a principal determinant for the benefits of a metacognitive approach to teaching and learning the use of computers.

There is continued pressure for the application and integration of computer technologies into learning and teaching. For such innovations to be successfully implemented, students themselves must have the confidence, ability and willingness to engage with computer technology. In some disciplinary and professional contexts such as arts, humanities, social studies and education many adult learners are insecure and anxious regarding their ability to use, or to learn about computer technology (Phelps et al., 2001, p. 481).

Phelps *et al.* (2001, p. 481) believe that what is lacking is “a metacognitive dimension, which empowers learners to become more independent in their approach to learning with, and about, computers in the future”.

Therefore, it is proposed in this study that lecturers and students be empowered by means of the facilitation of reflecting skills. This may stimulate cognitive activities such as questioning, self-awareness, problem stating, problem solving, emoting and ideation, enabling them “to become more independent in their approach to learning with, and about, computers in the future” (Phelps *et al.*, 2001, p. 481).

5.2.5 Trend 5: Social networking

As part of the Partners@Work programme participants had access to instructional designers and other participants via Yahoo Messenger. During the contact sessions instructional designers were always present to assist. During these sessions participants shared knowledge, and formed a strong social network, as is evident from the following excerpt:

I am looking forward to each Tuesday - not only to see and hear about the work that has been done and new work to come, but also to feel 'at home' with people who are good to be with, who share - in many ways - and who are also fun to be with while learning from them. I feel like being part of a huge, friendly family! Thank you all! (Table E.8.#10).

During the contact sessions participants supported each other:

Something on the side: Some of my fellow partners seem to be just, or even more, overwhelmed by all the new stuff that we want to take in. However, I also see some real caring and supportive human interactions between us. That is really great to see that we don't allow ourselves to get so "technology" focused, that we forget to bring some "humanness" into all the hardware, software and cyberspace. I'm a person-person and are fortunate to learn a lot about being "human" from all the Partners (Table C.7.#9).

Participants who made use of this social network as a resource and buffer against stress during the coping process bear out the opinion of Salovey *et al.* (Salovey *et al.*, 1999) that the more emotionally intelligent individuals possess the skills to form and utilise social networks as a resource. Evidence from their narratives and the frequency with which social support was mentioned (table 5.1) suggest evidence of these skills on the part of participants 2, 3, 5, 6, and 8. Participants 1, 4 and 9 mentioned using this resource to a limited extent, while participant 7 and 10 made no mention of using this resource as a coping strategy. What is significant is the aversion to technology and, by implication, the social networking software available as a resource.

Yahoo Messenger: Very useful to communicate but I don't like it, for the same reason I do not like e-mail. It wastes a lot of my time, which I don't have a lot of. Workload problems (Table G.2.#1).

According to Salovey *et al.* (1999) individuals who are less emotionally intelligent are not equipped with the necessary emotional intelligence skills to enable them to build and use supportive social networks as a resource. In a programme which facilitates the

mastering of new educational technologies, participants must be made aware of the significance of social support networks as an available resource during the coping process.

5.3 Resilience in terms of coping with mastering new technologies

Resilient individuals show evidence of optimism, positivity and often use humour as a coping strategy (Tugade & Fredrickson, 2001; Tugade & Fredrickson, 2004). Grotberg (2003, p. 4) lists the following factors pertaining to interpersonal and problem solving skills:

- Generating new ideas or new ways to do things.
- Staying with a task until it is completed.
- Seeing humour in a situation and using humour to reduce tension.
- Expressing thoughts and feelings when communicating with others.
- Solving problems in various settings – work-related, social, personal and academic.
- Managing behaviour in terms of feelings, impulses and acting out.
- Reaching out for help when needed.

Comparing these factors with emotional intelligence abilities pertaining to coping strategies according to Salovey and colleagues (Salovey *et al.*, 1999) the following theoretical abilities would seem to be apparent:

- The ability to manage emotions by moderating negative emotions and enhancing positive emotions is considered to be one of the most advanced skills within the regulation of emotion (Salovey *et al.*, 1999, p. 151).
- The ability to develop strong social networks and seek social support during periods of stress (Salovey *et al.*, 1999, p. 152).
- Salovey and colleagues believe that the “linguistic features characterising effective emotional disclosure (i.e., insight, causal thinking, and balance of emotion) reflect a person’s ability to understand, analyse, and actively regulate their emotions” (Salovey *et al.*, 1999, p. 155). Emotionally intelligent individuals will be more likely to engage in disclosure through writing – diaries and journals – and through the sharing of their thoughts and emotions with

friends and family, “because they have the emotional knowledge to do so effectively” (Salovey *et al.*, 1999, p. 155).

A comparison of these theoretical abilities with the abilities demonstrated by the participants gave rise to the following deductions:

- Participants 2, 3, 4, 6 and 8 showed evidence of emotional intelligence with their successful use of different coping strategies in various situations which arose during the process of mastering new educational technologies.
- Participants 5 and 9 showed evidence of emotionally intelligent behaviour in certain instances but appeared to lack the necessary abilities in other instances.
- It would appear that participants 1, 7 and 10 lacked the required abilities to cope with the mastering of new educational technologies in stressful situations.

In an effort to seek links between the coping strategies employed and emotional intelligence the abilities demonstrated by the participants which emerged from the analysis of their narratives are compared with the predicted abilities according to MSCEIT™ in the next section.

5.4 Possible linkages with emotional intelligence

5.4.1 Grouping of participants: Theme 1

An analysis of the Emotional Coping Hierarchy of the different participants (§ 4.5.1) in this group indicates the possibility that participants 2, 3, and 6 possess the necessary emotional intelligence skills as described by Salovey *et al.* (1999) to cope successfully with the mastering of new educational technologies. The Emotional Coping Hierarchies of participants 4 and 8 demonstrate underdeveloped levels, thus predicting an inability to cope successfully.

Participants in theme 1 demonstrated that they possessed the necessary emotional intelligence skills as they appeared able to generate new ideas and ways to solve problems (§ 4.3.1.1). They gave evidence of creative cognitive thinking (§ 4.3.1.1a and § 4.3.1.3), optimism (§ 4.3.1.6), positivity (§ 4.3.1.4), the use of humour (§ 4.3.1.7), the ability to make sense of emotional experiences (§ 5.2.3), and the ability to form and

use social networks (§ 5.2.4). A comparison of these abilities as demonstrated by participants 2, 3 and 6 with their predicted abilities according to the MSCEIT™ shows a correlation between the two. The predicted abilities of participants 4 and 8 do not concur with the abilities they demonstrated.

5.4.2 Grouping of participants: Theme 2

The Emotional Coping Hierarchies of both participants 5 and 9 predict the ability to cope successfully, having the necessary emotional intelligence skills as described by Salovey *et al.* (1999).

An analysis of their narratives confirmed their abilities to cope with new technologies in certain instances. Participant 9 demonstrated optimism (§ 4.3.2.5) and, to a limited extent, the ability to form and use social networks (§ 5.2.4). Participant 5 demonstrated positivity (§ 4.3.2.3) and both the ability to make sense of emotional experiences as expressed in the reflective diary (§ 5.2.3) and the ability to form and use social networks (§ 5.2.4).

Both participants tended to ruminate about factors which they perceived as a hindrance to coping successfully with specific technologies (§ 4.3.2.1b). They also tended to use negative coping strategies (§ 4.3.2.7).

A comparison of abilities as demonstrated by these participants with the predicted abilities according to the MSCEIT shows concurrence in certain instances, but not in others.

5.4.3 Grouping of participants: Theme 3

An analysis of the Emotional Coping Hierarchies of these participants reveals underdeveloped levels in the case of all three participants, thus predicting problems with coping successfully.

The participants demonstrated the use of negative coping strategies. Participant 1 only made use of repression and distraction actions (§ 4.3.3.4 and § 4.3.3.6), while all the participants in this group made use of avoidant coping strategies (§ 4.3.3.5), thus demonstrating a lack of the emotional intelligence skills needed to cope successfully with the mastering of new educational technologies.

5.5 Summary

In summarising the findings the main trends will be discussed briefly. This will be followed by the conclusion which will comprise a postulation of possible links between emotional intelligence and coping strategies.

5.5.1 Trends

The first trend of this study relates to the self-efficacy beliefs of the participants. *In the event of perceiving the technology to be user-friendly participants then experienced less stress with accompanying positive affect.* Participants seemingly felt more confident and experienced less stress in relation to those technologies they appraised as user-friendly and easy to use. Emotional intelligence in relation to the handling of stressful situations did not come into play.

The second finding pertains to the use of cognitive decision making as a coping strategy. *All the participants in the three different groups made use of cognitive decision making as a coping strategy.* There is a repetition of the first trend with the use of this coping strategy in the sense that, *if a technology were perceived to be user friendly, participants experienced less stress with accompanying positive affect.* Differences in the choice of coping strategies occurred in the appraisal of the situation as stressful. Participants from **Group 1** illustrated meta-cognitive thinking skills in creatively using alternative ways to solve problems, suggesting alternate ways of facilitating the Partners@Work programme, and reasoning about the validity of using a specific technology. These participants displayed the ability to cope adaptively with mastering stressful situations in accordance with the findings of Salovey and colleagues (Salovey *et al.*, 1999).

In contrast participants from **Group 2** used mainly cognitive decision-making coping strategies to comment on issues or situations which they perceived as hindering the process of mastering the new technologies. These participants appeared to lack the self-efficacy beliefs that could have assisted them in interpreting potentially threatening situations as manageable and thereby reducing negative thinking and regulating emotions. Accordingly, participants from **Group 3** also seemingly lacked the self-efficacy beliefs that could assist them in interpreting potentially threatening demands in a more positive light as challenges they would be able to meet.

The third trend in the study relates to the way in which participants reacted and coped when they perceived a situation as stressful. As in the second trend a dichotomy existed between the ways of coping with stressful encounters – either by using positive coping strategies or negative coping strategies. As regards participants from **Group 2** negative coping strategies seem to result mainly from a negative association with the facilitator of the technology. Negative coping strategies on the part of **Group 3** participants consisted mainly of avoidant actions – blaming other issues as the reasons for not coping effectively, and avoiding mastering the technology by not making any effort to use the technology. Significant in this instance is the way in which certain participants perceived their ability to cope with a technology they had not mastered as insufficient, and their narratives were evocative of negative emotive feelings such as feeling lost, frustrated and depressed.

In stark contrast with these negative coping strategies are the positive coping strategies used mainly by participants from **Group 1** and, to a lesser extent, by participants from **Group 2**. These participants tended, for the most part, to use problem-focused strategies, and were seemingly able to make creative plans when confronted with stressful situations. Their optimism meant that these participants tended to use adaptive emotion-focused coping strategies such as positive reframing, humour and acceptance in the event of problem-focused strategies not being a viable option. This trend underscores the importance of positive emotions as advocated by Fredrickson and colleagues (Fredrickson, 2005; Fredrickson *et al.*, 2000; Fredrickson & Tugade, 2003).

The fourth trend relates to the emotional disclosure of the participants in their reflective diaries. A limitation of the study is that it was possible to analyse only narratives from written documents and participants may have shared their feelings verbally. Therefore, this trend relates to the articulation of emotions and feelings in writing only. Two different trends manifested, as one group of participants articulated their emotions and feelings, while the other group was seemingly unable or unwilling to express their emotions and feelings in writing.

The fifth and last trend refers to the social networking skills of the participants. The participants had access to both the instructional designers and other participants during contact sessions of the Partners@Work programme and online via Yahoo Messenger. During the contact sessions instructional designers were always present to assist. During these contact sessions participants also shared knowledge and thus

established a strong social network. Participants 2, 3, 5, 6, and 8 demonstrated emotional intelligence skills in forming and utilising social networks as a resource, participants 1, 4, 9 and 10 mentioned using this resource to a limited extent, while participant 7 made no mention of using this resource as a coping strategy.

5.5.2 Possible links between emotional intelligence and coping strategies

From the comparison between the emotional intelligence skills and abilities as demonstrated by the participants, and the predicted emotional intelligence skills according to their emotional intelligence as measured with the MSCEIT and interpreted according to the Emotional Coping Hierarchy of Salovey *et al.* (Salovey *et al.*, 1999), it is evident that it is not possible to draw a general conclusion. However, in certain instances there are links between the emotional intelligence of the participants and the emotional intelligent competencies they manifested. What is important is the role of positive emotions in coping with the mastering of new technologies. As this is a case study with limitations, these findings are applicable to this case only. More research is needed in order to elucidate the role of emotional intelligence in the coping process.

The next chapter contains an overview of the study, the research questions and assumptions are revisited, a literature control of the research findings is carried out, the findings are theorised and recommendations made.

Chapter 6: Conclusion and recommendations

*We shall not cease from exploration
and the end of all our exploring
shall be to arrive where we started
and know the place for the first time*
T.S. Elliot

6.1 Introduction

This study was guided by a conceptual framework that included emotional intelligence, stress appraisal and coping process, the relationship between positive emotions and coping, the broaden-and-build theory of positive emotions, and the process model of affective response. The study is the result of an interest in emotional intelligence and the role it plays in the use of different coping strategies during the mastering of new educational technologies. As an instructional designer, part of my work entails the facilitation of new educational technologies, and I am intrigued by the idea that emotional intelligence may explain differences in the way lecturers cope with the mastering of new educational technologies. As the drive towards e-learning in higher institutions gains momentum, with accompanying expectations for an increase in input rates, the successful mastering of new technologies is becoming more and more crucial.

As a conclusion to this study, this chapter presents an overview of the study, revisits the assumptions and research questions, carry out a literature control of the research findings, theorises about the research findings and make recommendations in terms of practice, research and training. The chapter concludes by reflecting on the research.

6.2 Overview of the study

Chapter 1 served as an orientation to the study and began by sketching the background to the study. This was followed by a discussion on the context of the study. The problem statement and rationale were then presented, together with my personal interest in the role of emotional intelligence in coping strategies, as the construct of emotional intelligence as a possible mediator in the stress and coping processes is gaining interest internationally. This section was followed by the purpose and significance of the study. The main research question for the study was:

- What are the linkages between emotional intelligence and coping strategies when mastering new educational technologies?

With three sub-questions:

- What strategies do participants with diverse emotional intelligence profiles implement to master new educational technologies?
- What were the cognitive thought processes and emotions experienced by the participants while using diverse coping strategies?
- What are the trends regarding linkages between emotional intelligence and coping strategies used by participants?

Subsequently I gave an overview of the research design and methodology. The study comprised a mixed methods approach within a case study design using different paradigms with pragmatism serving as the foundation of the study. An interpretivist approach was adopted in studying the experiences, emotions and coping strategies of the participants, as well as a constructivist grounded theory approach for the analysis and interpretation of the data.

The chapter concluded with an outline of the organisation of the study.

In chapter 2, the constructs of emotional intelligence, stress, appraisal, coping and resilience, and the linkages between coping strategies and emotional intelligence were explored. The research executed in the field was investigated and I showed where my study fits in terms of significance. In terms of emotional intelligence, EI as being relevant to stress, appraisal, coping and resilience was discussed. I gave the background to the current models of emotional intelligence, explored the ability model of EI in terms of the different branches, as defined by Mayer and Salovey (1997) and synthesised the different concepts in terms my study. The section on EI concluded with an exploration of the development of emotional intelligence.

The processes of stress, appraisal and coping as relevant to coping with new educational technologies were then examined. This began with giving background to the theoretical model of the coping process, followed by a discussion of stress, appraisal and coping processes, and concluded with a summary and synthesis of the coping cycle in the context of my study.

I then gave an overview of the effect of positive emotions on the coping process, starting with an outline of new directions in coping research, followed by a discussion of the modified theoretical model of the coping process and the associated positive psychological states, concluding with a synthesis relating positive emotions and coping to the study.

Subsequently I gave an overview of positive emotions and the link with emotional intelligence. This began with an outline of the broaden-and build-theory according to Fredrickson (2005), followed by a discussion of increasing the prevalence of positive emotions and the “intelligent” use of emotions and resilience and concluding with a synthesis relating positive emotions and resilience to the study.

The process model of affective response as proposed by Ashkanasy, Ashton-James and Jordan (2004) was then discussed. As their model provides a deeper understanding of emotional intelligence as a moderator of work stress, the model has an important implication for research pertaining to linkages between emotional intelligence and coping strategies. Discussing the implications of the model in terms of the development of a supportive organisational climate, the section concluded with a synthesis of the implications of the model in terms of the study.

The Emotional Coping Hierarchy developed by Salovey, Bedell, Detweiler and Mayer (1999) facilitating the application of EI to the coping process and the processes linked with the coping process, was the next topic discussed. Consequently emotional intelligence linked to the coping process was examined from the viewpoint of Salovey and colleagues and the section concluded with a synthesis related to this study.

In the following section of chapter 2, the syntheses made throughout the chapter were summarised as working assumptions. Tapping from these constructs, the chapter concluded with the conceptual framework that served as a guide in the exploration of the following areas:

- The strategies implemented/employed by participants with diverse emotional intelligence profiles to master new educational technologies.
- The cognitive thought processes and emotions experienced by participants while using diverse coping strategies.
- The linkages between emotional intelligence and coping strategies used by participants with diverse emotional intelligence profiles.

In chapter 3, I presented the research strategy followed to answer the research questions. The research methodology consisting of a mixed methods approach within a case study design was discussed. In this study the research design entailed an instrumental case study with the unit of analysis being the 2004 group of lecturers attending the Partners@Work programme at the Department of Telematic Education at the Tshwane University of Technology. The unit of analysis provided rich and detailed data for this study.

Next, a description of the data collection, the data analysis and the data interpretation was given. Owing to the volume and richness of the collected data, Atlas.ti™, a qualitative data analysis software package, was used to assist in the preparation of the data for analysis. Using the analytic tools in the package, I endeavoured to enhance the validity of the study with detailed descriptions and examples of the procedures and outcomes used for coding and data analysis. I clarified my role as researcher, explaining the strategies followed to ensure trustworthiness and then concluded with the ethical considerations pertaining to this study.

In chapter 4, the interpretation of results relating to research sub-questions 1 and 2 were presented, as well as the results from the emotional intelligence test MSCEIT™. The first part of the chapter was an attempt to unlock the data by getting to the core of the feelings, emotions and reasoning behind the different coping strategies used to master new technologies; and using the data to illustrate, exemplify and illuminate the experiences, thought process, feelings and emotions of the participants. In concluding the chapter, I discussed the EI scores of the participants and presented the scores in terms of the Emotional Coping Hierarchy according to Salovey *et al.* (1999).

Chapter 5 pertained to the third sub-question and, together with the first two sub-questions, the intention was to answer the main research question. I started with an exploration of the main trends of this study and then compared the demonstrated emotional intelligence skills of the participants with their predicted emotional intelligence skills according to Salovey *et al.* (1999). The chapter concluded with a summary of the findings of the study.

6.3 Revisiting assumptions and research questions

In revisiting the assumptions and research questions, this section reports on the extent to which these assumptions were verified by the research findings and concludes with a summary of the answers to the research questions.

6.3.1 Assumptions

These assumptions are the outcome of a summary of syntheses made during the analysis and synthesis of the literature related to the study in chapter 2.

6.3.1.1 Assumption 1

Perceiving the situation as favourable in terms of having the capabilities to handle the situation, I assume the individual will experience less stress and be able cope adequately. In the event of perceiving the situation as stressful, my assumption is that the more emotionally intelligent individual will take responsibility for finding a solution to the problem, will show resiliency, and will use creativity, optimism and insight together with functional problem-focused coping strategies. Conversely, I assume that less emotionally intelligent individuals will use dysfunctional problem-focused coping strategies, comprising the inability to take responsibility and holding pessimistic views of their capacity of solving the problem.

Discussion

As reported in Trend 1 of the research findings, in the event of perceiving a technology as user-friendly with accompanying positive affect, all the participants seemingly experienced less stress and coped successfully with the particular technology. Participants expressed their perceptions of their own ability to handle the situation in terms of high self-efficacy.

In the event of perceiving the situation as stressful, the responses of participants could be divided into three groups. The first group of participants demonstrated resilience by giving evidence of positive coping strategies. The predicted skills in terms of their EI scores as interpreted according to the Emotional Intelligence Hierarchy of Salovey *et al.* (1999) did not corroborate with the demonstrated skills in all the cases. The predicted EI abilities of three of these participants concur with their demonstrated

abilities. The demonstrated abilities of the other two participants in this group to cope effectively with new technologies did not concur with their predicted abilities, because some of the levels of their Emotional Intelligence Hierarchies were not fully developed.

The second group of participants demonstrated the ability to cope in some instances but not in others. Consequently, their predicted abilities of being emotionally intelligent did not concur with the demonstrated negative coping strategies employed.

The demonstrated negative coping strategies of the third group of participants corroborated the predicted lack of necessary emotional intelligence skills, as their Emotional Intelligent Hierarchies contained underdeveloped levels, predicting associated lack of the emotional intelligence skills necessary in the coping process.

6.3.1.2 Assumption 2

As a reflection of their ability to understand, analyse and regulate their emotions, I assume that more emotionally intelligent individuals will be able to recognise that they are experiencing an emotion that requires a reaction in terms of emotional disclosure. These individuals will have the insight and causal thinking skills that enable them to understand and analyse the emotions caused by a stressful experience and to cope effectively. Conversely, I assume that less emotionally intelligent individuals will not be able to perceive and appraise their emotions accurately, and will therefore be unable to recognise the origin of the dilemma resulting in the inability to cope effectively

Discussion

One of the limitations of this study is that the research is biased towards the verbal and narrative accounts, as less verbal participants did not blog as much as the more verbal participants. I can therefore only draw conclusions about participants who did articulate their emotions and feelings in writing, although being unable or unwilling to disclose emotions and feelings in writing may be significant. Five of the participants gave evidence of the ability to make sense of emotional experiences. As a prerequisite for this, Salovey *et al* (1999) contend that the participants must be able to appraise and express their emotions, defining the meaning of the feelings. In accordance with Salovey *et al.* (1999, p. 148) being clear about the feelings experienced, these participants seemingly showed less ruminative coping. Salovey *et al.* (1999) hold that the ability to understand, analyse and regulate emotions will be reflected by individuals

showing evidence of being able to recognise that they are experiencing an emotion that requires a reaction in terms of emotional disclosure.

The demonstrated emotional intelligence abilities of these participants concur with their predicted emotional intelligence abilities.

6.3.1.3 Assumption 3

I assume that the more emotionally intelligent individuals will have emotional competencies to manage their emotions by moderating negative emotions and concentrating on positive emotions, thereby enabling them to resist rumination. In contrast, I assume that less emotionally intelligent individuals will have trouble appraising and understanding emotions caused by a stressful event, resulting in an inability to gain clarity and to label emotions. Being unable to make sense of their emotional experiences and the need for some kind of meaning-making activity, I assume that less emotionally intelligent individuals will tend to employ ruminative coping or avoidance coping strategies.

Discussion

As with assumption 1, the response of the participants could be divided into three groups.

The first group of participants demonstrated resilience by giving evidence of positive coping strategies. The predicted skills in terms of their EI scores as interpreted according to the Emotional Intelligence Hierarchy of Salovey *et al.* (1999) did not correspond with the demonstrated skills in all the cases. As with assumption 1, the predicted abilities of three of the participants concur with their demonstrated abilities, while the demonstrated abilities to cope effectively with new technologies of the other two participants in the first group did not concur with their predicted abilities, because some of the levels of their Emotional Intelligence Hierarchies were not fully developed.

As with assumption 1, the second group of participants demonstrated the ability to cope in some instances but not in others. Consequently, their predicted abilities of being emotionally intelligent did not concur with the demonstrated negative coping strategies employed.

Repeating the tendency in assumption 1, the demonstrated negative coping strategies of the third group of participants corroborated the predicted lack of necessary

emotional intelligence skills, as their Emotional Intelligent Hierarchies contained underdeveloped levels, predicting associated lack of the emotional intelligence skills needed in the coping process.

6.3.1.4 Assumption 4

Being emotionally intelligent, I assume that more emotionally intelligent individuals will be equipped with skills that will enable them to make use of social networks as a resource and a buffer against stress. Conversely, less emotionally intelligent individuals will lack the skills to utilise social support during the coping process.

Discussion

Concurring with the opinion of Salovey *et al.* (1999) that more emotionally intelligent individuals will have the skills to form and utilise social networks as a resource, some participants made use of social networks as a resource and buffer against stress during the coping process. In five of the participants, evidence from their narratives and frequency of mentioning social support (Table 5.1) suggest evidence of these skills. Four of the participants mentioned using this resource to a limited extent, while one participant made no mention of using this resource as a coping strategy. It is significant that this participant has an aversion to technology and by implication the social networking software available as a resource.

6.3.2 Research questions

6.3.2.1 Sub-question 1

What strategies do participants with diverse emotional intelligence profiles implement to master new educational technologies?

Discussion

All the participants in the three different groups made use of cognitive decision making as a coping strategy. In times of perceived self-efficacy, participants made use of direct problem-solving coping strategies, seemingly feeling confident about their ability to use and apply the particular technology.

The analysis of data revealed three distinct groups among participants:

Theme 1: Participants using positive and no negative coping strategies

Theme 2: Participants using both positive and negative coping strategies

Theme 3: Participants using negative and no positive coping strategies

6.3.2.2 Sub-question 2

What were the cognitive thought processes and emotions experienced by the participants while using diverse coping strategies?

Discussion

The cognitive thought processes and emotions experienced differed as participants from the different groups expressed in their narratives.

Theme 1

In this group of participants, it is important to note the absence of negative coping strategies such as distracting actions, avoidant actions and repression. Their narratives exude positivity throughout, eliciting questions about the link with emotional intelligence. These participants expressed their feelings, thoughts and emotions, sharing excitement, and turning uncertainty and fear into optimism.

Theme 2

What is noteworthy about this group of participants is the use of positive coping strategies when a technology is perceived as user friendly, and the use of negative coping strategies when a technology is perceived as difficult or not necessary. One participant used avoidant coping strategies when the technology was perceived as difficult, while another participant focused negatively on the presenter in the case of video conferencing, and had an issue with the homework being given. Although receiving help from the instructional designers was part of the programme, one of these participants did not mention getting help or support from the instructional designers as part of support seeking coping strategies.

Theme 3

What stands out about this group of participants is the lack of positive coping strategies. It should also be noted that this group of participants used problem-focused coping strategies when the technology was perceived as user friendly and avoidance

coping strategies if the technology was perceived as too difficult or not necessary for a particular course.

6.3.2.3 Sub-question 3

What are the trends regarding linkages between emotional intelligence and coping strategies used by participants?

Discussion

Theme 1

Analysis of the Emotional Coping Hierarchy of the different participants in this group points to the possibility of three of the participants having the necessary emotional intelligence skills as described by Salovey *et al.* (1999) to cope successfully with the mastering of new educational technologies. The Emotional Intelligence Hierarchies of two of the participants in this group showed underdeveloped levels, predicting inability to cope successfully, although these two participants did demonstrate emotional intelligence abilities to cope with the mastering of new educational technologies.

These participants all demonstrated the necessary emotional intelligence skills to cope with mastering new educational technologies. They coped successfully by generating new ideas and ways to solve problems, demonstrating creative cognitive thinking, using optimism and positivity the use of humour the ability to make sense of emotional experiences and the ability to form and use social networks Comparing these demonstrated abilities with the predicted abilities according to the MSCEIT™, the demonstrated EI abilities of three of the participants concur with their theoretical EI abilities according to the MSCEIT™. The predicted abilities of two participants did not concur with their demonstrated EI abilities.

Theme 2

The Emotional Intelligence Hierarchies of both these participants predict the ability to cope successfully by having the necessary emotional intelligence skills as described by Salovey *et al.* (1999).

An analysis of their narratives confirmed demonstrated abilities to cope with new technologies in certain instances. One participant demonstrated optimism and to a limited extent the ability to form and use social networks while another participant

demonstrated positivity and an ability to make sense of emotional experiences as expressed in the reflective diary as well as the ability to form and use social networks.

Both participants tended to ruminate about factors perceived as a hindrance to successfully coping with specific technologies and use negative coping strategies.

The comparison of demonstrated abilities with the predicted abilities, according to the MSCEIT™, thus concurs in some instances but not in others.

Theme 3

An analysis of the Emotional Coping Hierarchies of these participants reveals underdeveloped levels in the case of all three the participants, predicting difficulty in coping successfully.

The participants demonstrated the use of negative coping strategies. Only one participant made use of repression and distraction actions while all the participants in this grouping made use of avoidant coping strategies demonstrating a lack of emotional intelligence skills for coping successfully with mastering new educational technologies.

6.3.2.4 Main research question

What are the linkages between emotional intelligence and coping strategies when mastering new educational technologies?

Discussion

In comparing demonstrated emotional intelligence skills with predicted emotional intelligence skills according to their emotional intelligence, as measured with the MSCEIT™, several links emerged although no general conclusions can be drawn. In some instances the theoretical emotional intelligence skills of the participants, as predicted by an interpretation of their EI scores measured with the MSCEIT™, concurred with the demonstrated emotional intelligence competencies, while in other instances there were no concurrences. The role that positive emotions played in this study in coping with the mastering of new educational technologies is, however, noteworthy.

Data from this study suggest that a number of factors influence coping strategies when attempting to master new technologies, including self-efficacy beliefs, social networking

structures as a resource, the use of positive emotions, the role of the facilitator and the emotional intelligence abilities associated with coping competencies.

While a number of linkages between emotional intelligence and coping strategies could be identified, the interdependency of coping strategies and emotional intelligence remains elusive. As this is a case study with limitations, these findings are applicable to this case only. More research is needed in order to explicate the role of emotional intelligence and other factors in coping with new educational technologies.

The conceptual framework of this study is a result of linking and synthesizing the interdisciplinary fields of emotional intelligence, stress, coping strategies, positive emotions and resilience into a coherent whole, resulting in the assumptions stated in chapter 2 and revisited in this chapter. As this forms a theoretical framework is innovative and new, it may be potentially broadly applicable.

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6.4 Literature control of the research findings

6.4.1 Perceiving ability as adequate

I postulated that the challenge to facilitators of programmes introducing new technologies may be to guide and assist in the mastering of the technologies in such a way that resilient self-efficacy might develop.

Bandura posits that “self-beliefs of efficacy influence how people feel, think and act” (Bandura, 1992, p. 3). What is important for self-efficacy as a construct is that it is considered to be highly specific (Schwarzer, 1992, p. ix). An individual “can have more or less firm beliefs in different domains of functioning” (Schwarzer, 1992, p. ix). In the environment of mastering new educational technologies, an individual may feel highly

efficacious in mastering a specific technology, yet have low self-efficacy in mastering another.

Bandura reports on studies involving variables in motivation (Bandura, 1992; , 1997), where self-efficacy correlated highly with past experiences and was found to be the best predictor of achievement. More research is needed to assess the effect of the development of self-efficacy beliefs on individuals' performance when mastering new technologies.

6.4.2 Use of cognitive decision making as a coping strategy

I postulated that the role of the facilitators could not be underestimated in the process of mastering new educational technologies. If participants lack self-efficiency beliefs, it might be possible to strengthen these beliefs if they are persuaded that they can succeed with interventions by facilitators in giving them manageable chunks of work and guiding them step-by-step in the mastering process.

McCormick, Ayres and Beechy (2006) contend that in the absence of direct experience, social persuasion becomes more significant as a source of self-efficacy. According to these authors, personal agency beliefs in individuals' capacity communicated by significant others, such as a facilitator, may contribute to self-efficacy. An individual participating in a programme with colleagues articulating a supportive, positive "you are able to" in terms of mastering new educational technologies may develop higher self-efficacy beliefs pertaining to coping capabilities (McCormick *et al.*, 2006).

6.4.3 Perceiving the situation as stressful

I proposed that in the process of facilitating the mastering of new educational technologies and the cultivation of positive emotions in accordance with Fredrickson (2005, p. 120) could bring about optimal functioning.

Stressors are part of the work environment; moreover, in the process of mastering new educational technologies, it stressors are almost inevitable. The extent to which an individual experiences stress depends on the appraisal of stressor, as the possibility of the event being a potential stressor or threat is established by the primary appraisal, while the probability of the outcome being positive or negative is established by the secondary appraisal (Folkman & Greer, 2000; Lazarus & Folkman, 1984). Primary and

secondary appraisals combine to establish whether the potential stressor has the possibility of harm or loss, or whether it is challenging holding the possibility of mastering and benefit (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986). This is not very different from “coping self-efficacy” (Bandura, 1997).

According to McCormick *et al.* (2006), physiological and affective states are the weakest source of self-efficacy beliefs. These authors posit that, if individuals experience negative feelings associated with a particular activity, they are likely to interpret this as “an indication of low capability to successfully perform the activity, with a consequent lowering of self-efficacy for the activity”. Therefore, stress associated with the introduction of new educational technologies may have a negative effect on the self-efficacy of an individual in relation to mastering the new technology. In the process of facilitating the mastering of new educational technologies, the cultivation of positive emotions in accordance with Fredrickson (2005, p. 120) could change the negative appraisal to a positive challenging appraisal with the possibility of mastering the new technology.

6.4.4 Reflection

I proposed that lecturers and students should be empowered by facilitating reflecting skills. This may stimulate cognitive activities such as questioning, self-awareness, problem stating, problem solving and generating new ideas enabling them “to become more independent in their approach to learning with, and about, computers in the future” (Phelps, Ellis, & Hase, 2001).

Barth, Godemann, Rieckmann and Stoltenberg (2007, p. 416) posit that “to date, little attention has been given to the circumstances in which the process of developing key competencies for sustainable development may take place” within higher education. These authors report that, with regard to the acquisition of key competencies, data from their research showed reflection processes as being one of the significant learning processes. Taking a critical stance with regard to one’s actions and having the ability to reflect on them seems to be a decisive prerequisite in the learning process (Barth *et al.*, 2007, p. 425). On an individual level, reflecting on one’s personal method of learning, questioning and examining tried and tested routines are necessary steps in the learning process (Barth *et al.*, 2007, p. 425). These authors contend that, in group contexts, “reflecting on the collaboration leads to identifying possible solutions which could take new, as yet, untried directions” (Barth *et al.*, 2007, p. 425).

6.4.5 Social networking

In a programme facilitating the mastering of new educational technologies, participants must be made aware of the significance of social support networks as a resource during the coping process. According to Salovey et al. (1999) less emotionally intelligent individuals are not equipped with the necessary emotional intelligence skills to enable them to build and use supportive social networks as a resource.

McCormick *et al.* (2006) report on studies where social support has consistently been found to be negatively associated with occupational distress. They contend that social support relates conceptually to variables such as social persuasion and explicit experience. Particularly important is encouragement and affirmation of self-esteem, which may be conceptualised as mechanisms of instrumental social support (McCormick *et al.*, 2006).

6.5 Recommendations

In this section, recommendations are made that emerged from the trends in the findings of this study. Although the recommendations resulted from within the bounds of this case study, they may be applicable in similar situations in other higher education institutions. Recommendations pertaining to further research are presented in §6.5.1, recommendations in terms of practice in §6.5.2 and recommendations in terms of training in §6.5.3.

6.5.1 Research

Reeves *et al.* (2005, p. 110) states unequivocally:

Certainly, the need for a more socially responsible research agenda in instructional technology has never been greater. Instead of continuing to tinker around the edges of teaching and learning challenges by conducting quasi-experimental studies focused on small changes in learning environments or even conducting one-off qualitative studies of esoteric cases, instructional technology researchers and their colleagues in other academic disciplines must begin to tackle the huge problems we face in the first quarter of the 21st century. Design research offers a positive step in that incredibly important quest.

Design research presents the opportunity to advance teaching and learning in higher education. The recommendations may be implemented as part of an encompassing study as components facilitating the mastering of new educational technologies.

Recommendation 1

In terms of the role of programme facilitators in developing self-efficacy, more research is needed to determine whether the development of self-efficacy beliefs related to the mastering of new technologies have an effect on individuals' performance. If they do, then such findings may have implications for developmental methods in interventions designed to optimise individual perceived coping efficacy. Interventions should be developmentally appropriate, taking into consideration how the context of mastering new educational technologies creates experiences that undermine or promote perceived ability to cope efficiently. Assessing the effects of changing beliefs on coping ability, emotive feelings and motivation may provide more pieces of the puzzle to complete the picture of factors influencing coping with mastering new educational technologies.

Recommendation 2

Different authors comment on the use of reflective journal writing in benefiting adult learning (Kerka, 1996; Phelps *et al.*, 2001). Salovey *et al.* (2005, p. 163) hold that emotional disclosure provides the means to reflect upon and manage emotions, which are central to emotional self-regulation. Individuals with insight and causal thinking skills will have the ability to understand and analyse emotions caused by a stressful experience (Salovey *et al.*, 2005). Research on the role of reflection in the use of metacognitive and reflective learning approaches may elucidate the role it can play in terms of developing the emotional intelligence skills that enable participants in training programmes to master new educational technologies.

Recommendation 3

The work of Fredrickson (Fredrickson, 2005; Fredrickson & Joiner, 2002; Fredrickson & Levenson, 1998; Fredrickson, Mancuso, Branigan, & Tugade, 2000; Fredrickson & Tugade, 2003) underscores the importance of positive emotions in optimal functioning. Research on the role of the use of positive emotions and different coping strategies may shed light on factors pertaining to the mastering of new educational technologies.

6.5.2 Practice

Recommendation 4

Institutions should create a supportive organisational climate for e-learning as a support for face-to face training programmes in skills development. The provision of programme facilitators trained in coaching participants, focusing on the accomplishment of self-directed learning, assisting participants in the attainment of goals, modelling positive emotive skills, and encouraging the practice of new skills may help to realise the promise of blended learning.

Recommendation 5

Programme facilitators encouraging participants in training programmes to reflect in online reflective diaries should take the opportunity to enhance self-efficacy by replying to participants' blogs. In the case of this study, participants frequently commented on the need for facilitators to reply to their blogs and to give them feedback.

6.5.3 Training

Recommendation 6

As blended learning has become an established delivery mode not only in higher education, but also in the corporate world, development programmes in mastering new educational technologies need the assistance of facilitators trained to coach emotional intelligence and reflective skills in addition to facilitators focusing on the mastering of technologies. Dede (2004, p. 30) argues that institutions investing in the professional development of lecturers “will gain a considerable competitive advantage in both recruiting top students and teaching them effectively”, which underscores the importance of the role of facilitators in programmes facilitating new educational technologies.

6.6 Reflection

This study has been a voyage during which I learnt a great deal from participants, colleagues and supervisors. It contributed towards my personal and professional growth, and taught me to embrace positivity.

We should cultivate positive emotions in our own lives and in the lives of those around us not just because doing so makes us feel good in the moment but also because doing so will transform us to be better people, with better lives in the future (Fredrickson, 2005, p. 131).



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Appendices

Appendix A

Outcomes of the analysis process: Participant 1

Table A.1	Coping strategies: Participant 1
Table A.2	Reasoning on CDM: Participant 1
Table A.3	Reasoning on DPS: Participant 1
Table A.4	Reasoning on DA: Participant 1
Table A.5	Reasoning on AVA: Participant 1
Table A.6	Reasoning on REP: Participant 1
Table A.7	Reasoning on SUPA: Participant 1
Table A.8	Range of perceived abilities: Participant 1
Table A.9	Reasoning on perceived abilities: Participant 1



Table A.1 Coping strategies: Participant 1

Possible strategies		Strategies used	
Active coping strategies	Problem focused coping	Cognitive decision making (CDM)	CDM- Thinking about ways to solve the problem
		Direct problem solving (DPS)	DPS- Practice DPS- Put time in to use it DPS- Use it
		Seeking understanding (SU)	
	Positive cognitive restructuring	Positivity (POS)	
		Control (CON)	
		Optimism (OPT)	
		Use humour	
Distraction strategies	Distracting actions (DA)	DA- Use Blog to vent frustration	
	Physical release of Emotions (PRE)		
Avoidance strategies	Avoidant actions (AVA)	AVA- Blaming other things AVA- Do other things AVA- Use another option	
	Repression (REP)	REP- Blotted it out REP- Ignore it	
	Wishful thinking (WISH)		
Support seeking strategies	Support for actions (SUPA)	SUPA- Ask for help SUPA- Ask for people's opinions SUPA- Get help from ID	
	Support for feeling (SUPF)		

Coping strategies of the participant are highlighted in yellow.



Table A.2 Reasoning on CDM: Participant 1

Coping strategy	Reasoning	Quotation	Number
CDM- Thinking about ways to solve the problem	Made suggestion	IN FUTURE IN CLASS: REPETITION AND AN EXERCISE ON PRE-KNOWLEDGE. (Capital letters used by participant) Comment: Note capital letters	#1
		Would like to have revision sessions before we start with new computer skills.	#2
	Perception negative	I am not sure if our first years will be sufficiently computer literate to buy into interactive programmes.	#3
	Perception positive was good in making us repeat an exercise until we had an understanding of it.	#4
		Found the first part of the hands on programme extremely useful as it was a revision of uploading work to WEBCT.	#5
		Respondus is far more user friendly [sic] than e-testing on webct. I think the students will find it easier too. Want to have a careful look and see what qualities make it so user friendly and then try to incorporate these elements in my programme that I am developing.	#6
	User friendly	E-testing will be a saving grace. Students can do tests in their own time with the random aspect.it will save tremendous time on marking	#7
		Found the first part of the hands on programme extremely useful as it was a revision of uploading work to WEBCT. Got slightly lost during the creating of our own courses in WebCT. Comment: Participant experienced the first part useful as it was a revision of previous work done, got lost again when it was expected of them to create their courses in WebCT by themselves. From field notes: Participant depended quite heavily on the instructional designer in creating the course in WebCT.	#8



Table A.3 Reasoning on DPS: Participant 1

	Reasoning	Quotation	Number
DPS- Practice	User friendly	<i>Respondus: No problem with practice.</i>	#1
DPS- Put time in to use it	User friendly	<i>Front page: Gave it a lot of time and use. Effective programme. Saves faults as can be uploaded directly to WebCT.</i>	#2
DPS- Use it	Enjoyable	<i>Yahoo was excellent. I enjoyed it very much as I managed to keep up most of the time. I find I have to stop myself from delving into the websites and losing track of what is going on.</i>	#3
	User friendly	<i>Blogger: Easy. Worthwhile tool.</i>	#4
DPS- Practice	Perception positive	<i>WebCT: Practise</i>	#5
	User friendly	<i>Respondus: No problem with practice.</i>	#6

Table A.4 Reasoning on DA: Participant 1

Coping strategy	Reasoning	Quotation	Number
DA- Use Blog to vent frustration	User friendly	<i>Blogger: Felt heard. It was good to let go of frustrations and emotions.</i>	#1

Table A.5 Reasoning on AVA: Participant 1

Coping strategy	Reasoning	Quotation	Number
AVA- Blaming other things	Blaming	<p>... was in my office on Wednesday and my computer settings have only been changed by our assistant today. Could thus not work on Wednesday and Thursday. Two days wasted and I am so slow! I want to scream with frustration. It means I will have to come into the office over the weekend. It also means that if I struggle I cannot phone the mentors as it is a weekend. I am becoming quite depressed.</p> <p>Comment:</p> <p>Is there a linkage between the EI of participant and negative emotional experience with problems encountered? How do participants with different EI profiles deal with software, hardware and infrastructure problems encountered?</p> <p>What intervention is necessary to help people with low resilience to cope better?</p> <p>MEMO: IE-importance of -ME - 06/03/29 (Super, 06/03/29 02:57:19 PM)</p> <p>Type: Theory</p> <p>P2</p> <p>According to the framework of emotional intelligence, one must be competent at understanding his/her emotions -- both positive and negative, be able to process emotional information accurately and efficiently, and have the insight to skillfully use one's emotions to solve problems, make plans, and achieve in one's life Tugade, Michele M. & Fredrickson, Barbara L. (2001).</p> <p>P10</p> <p>Resilient Individuals Reflect Emotional Intelligence</p> <p>Psychological resilience is characterized by the ability to bounce back from negative emotional experiences and by flexible adaptation to changing situational demands Those with low resilience are said to have a difficult time coping with negative experiences and are unable to recover from them</p> <p>p18</p> <p>of positive appraisals that generate positive emotions, they also have the capacity to effectively regulate negative emotional experiences. These results imply that interventions that promote positive appraisal styles might be especially useful for those with lower levels of psychological resilience.</p>	#1



Table A.5 Reasoning on AVA: Participant 1 (cont.)

Coping strategy	Reasoning	Quotation	Number
AVA- Blaming other things	Blaming	<i>Still waiting for Telkom. No word from them. I really wish these technical aspects had been in place when we started in June, I felt I have lost so much time</i>	#2
		<i>Telkom's ... phoned from ... yesterday with a reference number for the instalation of my line at home. Nobody from Telkom, ...r has phoned yet. Working from home will make my life easier. It seems as if they still have to lay cable.....another month maybe before I can work from home? If I am lucky.</i>	#3
		<i>At long last on line. Just using the old internet connection from home with worldonline. Thank goodness...at least I can now do SOMETHING! Very slow and teething problems! Cannot get into partners and pass or groupwise at this stage. Hopefully this can be sorted out on Thursday when the worldonline technician comes again.</i>	#4
		<i>Still waiting for Telkom. No word from them. I really wish these technical aspects had been in place when we started in June, I felt I have lost so much time. What i have done now has been my own initiative and is going to cost me I just could not continue the way things were. At least i can now work from home and make some progress.</i>	
AVA- Do other things	Perception negative	<i>Video conferencing: Found it ineffective so rather tried to spend time on items I found effective.</i>	#5
		<i>Perception: Ignored it spent my time on things I could do and rather mastered them. Comment: Avoidance strategy- link with EI?</i>	#6
AVA- Use another option	Perception negative	<i>Video conferencing: Don't mind others using it. Me not. Will rather travel for the of camera interaction which is often more useful.</i>	#7
		<i>Corel draw: Lost, haven't a clue.</i>	#8

Table A.6 Reasoning on REP: Participant 1

Coping strategy	Reasoning	Quotation	Number
REP- Blotted it out	Not used	<i>Camtasia: Know that it exists and that I could come back to it when and if I need it.</i>	#1
	Perception negative	<i>Camtasia: Blotted it out as I found it above me together with the other information overload</i>	#2
REP- Ignore it	Not used	<i>Perception: Ignored it spent my time on things I could do and rather mastered them. Comment: Avoidance coping- link with EI?</i>	#3
	Not used	<i>Corel draw: None. Just left it behind and did the job with other tools</i>	#4



Table A.7 Reasoning on SUPA: Participant 1

Coping strategy	Reasoning	Quotation	Number
SUPA-Ask for help	Perception positive	<i>Blogger: Asked fellow partners to help</i>	#1
SUPA-Ask for people's opinions	Unsure	<i>Not sure if I have to develop the whole curriculum for a year or whether I may only concentrate on the root of the problem; language proficiency.</i> <i>Need to get the lecturers in the subject on all campuses to buy into programme. Have to ask for their inputs</i>	#2
SUPA-Get help from ID	Perception positive	<i>Had an interesting conversation with ... on the stairs. Want to look at what is available in Pearson's in depth before I start developing. ... example of a string of beads is very relevant.</i> Comment: Participant spend long ours over week-ends with ID helping to get programme up and running	#3

Table A.8 Range of perceived abilities: Participant 1

Able to use it	Need to master part of it	Empowering	Clueless	Did not use it
✓	✓	✓	✓	

Table A.9 Reasoning on perceived ability: Participant 1

Reasoning	Quotation	Number
Able to use it	Front page: Enjoyed this. Felt able and competent. Comment: Positive emotional experience with positive perceived ability-linkage with coping strategy?	#1
	Respondus: Reasonable	#2
	Repondus: Felt I could cope with it and master it. Comment: Positive appraisal and emotional experience. Link with coping strategy?	#3
Clueless	Camtasia: Felt out of my depth. Felt lost. Comment: Negative emotional experience- how does this link to coping strategy and EI?	#4
	Corel draw: Lost, haven't a clue Comment: Another example of negative emotional experience and negative appraisal	#5
	Camtasia: Blotted it out as I found it above me together with the other information overload. Know that it exists and that I could come back to it when and if I need it. Comment: Avoidance coping- link with EI?	#6
	WebCT: Not quite adequate yet	#7
	Perception: No ability	#8
	Camtasia: No ability	#9
	Corel draw: Minimal	#10
	Took out my home work for 27 July and did not understand a thing. Will have to take it bit for bit and try to figure it out. I feel so stupid at the moment.	#11
Empowering	Video: Excellent	#12
	Video conferencing: Good. Comment: Didn't use it- contradiction?	#13
	Front page: Good	#14
	Blogger: Very good	#15
	Yahoo: Very good	#16
Need to master part of it	WebCT: Not quite adequate yet	#17

Appendix B

Outcomes of the analysis process: Participant 2

Table B.1	Coping strategies: Participant 2
Table B.2	Reasoning on CDM: Participant 2
Table B.3	Reasoning on DPS: Participant 2
Table B.4	Reasoning on SU: Participant 2
Table B.5	Reasoning on POS: Participant 2
Table B.6	Reasoning on OPT: Participant 2
Table B.7	Reasoning on Use humour: Participant 2
Table B.8	Reasoning on SUPA: Participant 2
Table B.9	Range of perceived abilities: Participant 2
Table B.10	Reasoning perceived ability: Participant 2



Table B.1 Coping strategies: Participant 2

Possible strategies		Strategies used	
Active coping strategies	Problem focused coping	Cognitive decision making (CDM)	CDM- Thinking about ways to solve the problem
		Direct problem solving (DPS)	DPS- Use it
		Seeking understanding (SU)	SU- What could be learned from this
	Positive cognitive restructuring	Positivity (POS)	POS- Will use it in future POS- Mention the positive
		Control (CON)	
		Optimism (OPT)	OPT- Things will work out OPT- Will be able to do it/use it
		Use humour	Use humour
Distraction strategies	Distracting actions (DA)		
	Physical release of Emotions (PRE)		
Avoidance strategies	Avoidant actions (AVA)		
	Repression (REP)		
	Wishful thinking (WISH)		
Support seeking strategies	Support for actions (SUPA)		
	Support for feeling (SUPF)		
		SUPA- Ask for people's opinions SUPA- Discuss it with others SUPA- Learn from others	



Table B.2 Reasoning on CDM: Participant 2

Coping strategy	Reasoning	Quotation	Number	
CDM- Thinking about ways to solve the problem	Blaming	<p>Front Page: I did not have problems in mastering FrontPage, but many problems with the program (software) itself, and therefore did not incorporate it in my course (Used powerpoint in stead) I will definitely use it in future, because I think it is a powerful application!</p> <p>Comment: Cognitive decision making- look for another way to solve the problem with software</p>	#1	
		<p>Blogger: I like the idea of blogging and did not have problems mastering it. The Blogger website, however, I did not like. I do not think to implement it somewhere in future - will use the survey-tool in WebCT for this purpose rather.</p> <p>Comment: Cognitive decision making- use another option- reasoning sound</p>	#2	
	Made Suggestion Perception positive		<p>This was a good day!</p> <p>I do like new things, and therefore are looking forward to try out the e-portfolio idea - I can see how this can be of tremendous help in IT subjects, where most of the student's work is in electronic format in any case - and must always be printed out.</p>	#3
			<p>The session on Analysis for subject development was excellent - the document provided is a very good guide to the process - especially for somebody that has never done this before.</p> <p>I think some of us could have done with more time on both, but am sure that we will all live!!</p>	
			<p>Very interesting information - it helps to understand the important facts to remember when creating not only video clips, but any type of graphics. It may be a good idea to have this session again later during the course, after we have worked with graphics more, and more people will understand the basic ideas behind it.</p>	#4
			<p>This was a fun exercise to introduce Corel's many graphic options. I know, however, that this is a massive program, with lots and lots of nice things that one can do and therefore it will take more than these 6 months for us to really be able to use it to its fullest potential. Maybe we can have little things to do in it every now and then, each time challenging us to discover something else about the program?</p>	#5
	<p>The scriptwriting session at last helped me to direct my thoughts more about the planned video. I would have liked it if we could work more on it, with his help there while he explained the principles. I am glad that we did not have to work on a imaginary problem again...</p>	#6		



Table B.2 Reasoning on CDM: Participant 2 (cont.)

Coping strategy	Reasoning	Quotation	Number
CDM- Thinking about ways to solve the problem	Made Suggestion Perception positive	Frontpage - and a word of thanks <i>This was also a good exercise - like with all these programs, I hope that the telematic team plan to force us to use it, but in small steps, because I believe that is only with applying new things (and battle to get things work) that you really learn to use it properly. Well done, ...!</i>	#7
	Not used Perception positive	Perception: <i>I found Perception really difficult to use and did not spend enough time on mastering the program. I, however, understand that it is a very powerful program with many excellent options. I did not implement it in my course at all at this stage. If I have enough time, I will investigate the application further in more detail</i>	#8
		Corel Draw: <i>I have not used Corel Draw a lot, since I know Adobe Photoshop already. In general I think a basic knowledge of a drawing package is important in instructional design - even if only for some basics</i> Comment: Cognitive decision making- use another option- reasoning sound	#9
		Front Page: <i>I did not have problems in mastering FrontPage, but many problems with the program (software) itself, and therefore did not incorporate it in my course (Used powerpoint in stead) I will definitely use it in future, because I think it is a powerful application!</i> Comment: Cognitive decision making- look for another way to solve the problem with software	#10
		Blogger: <i>I like the idea of blogging and did not have problems mastering it. The Blogger website, however, I did not like . I do not think to implement it somewhere in future - will use the survey-tool in WebCT for this purpose rather.</i>	#11
		Videoconferencing: <i>I have no practical experience of videoconferencing (organizing it myself) and still am not sure how it can be applied in the current subject - I, however, understand the possibilities, especially for guest speakers etc.</i>	#12
		Video: <i>I have completed the video-thing yet... Mainly because of time - I have gone through the planning and preparation phases and found it interesting. Hope to complete it later in this semester, because there is a definite application possibility of this in the subject developed for Partners@Work.</i> Comment: Sien die toepassingsmoontlikheid daarvan in vakgebied.	#13



Table B.2 Reasoning on CDM: Participant 2 (cont.)

Coping strategy	Reasoning	Quotation	Number
CDM- Thinking about ways to solve the problem	Perception positive	Camtasia: <i>What an excellent little application for use in ...! I found it easy to master and have used it for a few movie clips - will definitely use it for many more typical student problems.</i> Comment: See advantages for use in own field. Think meta-cognitively.	#14
		<i>I also have a better understanding of what is needed in the blueprints, but believe that this will be a work in progress - therefor I am looking forward to discuss it with the other partners, to see what each one plan to incorporate in their courses.</i>	#15
		<i>Hot Potatoes looks like a tool that can be applied easily and that will solve my self-test problems.</i>	#16
		<i>The possibilities of WebCT as test organizer is amazing! I can see many self-tests, pre-tests, surveys etc. being done here for my course as well. I still cannot see that I will use it to replace the two main semester tests, because of its limitations, but maybe I just do not know enough about this tool yet.</i>	#17
		<i>Assessment... I am not good at short questions at all! But after playing with Respondus for a while, I can see a major advantage of it's use for shorter assessments, as well as self-assessments and I will try to include it in the planned activities for the course. It is still a lot of work to transfer existing questions to it, but I am sure that shortcuts will be developed soon!</i>	#18
	Unsure	<i>I still have reservations about Perception - it seems to be a bit complicated, again only for shorter question types - I see there is an essay option as well and will look into it, to see how it can help me to mark programming.</i>	#19
	User friendly	<i>Respondus has got my vote - I created a nice activity, making use of Respondus for the self tests, as well as a short formal assessment.</i>	#20
		<i>The scriptwriting session at last helped me to direct my thoughts more about the planned video. I would have liked it if we could work more on it, with his help there while he explained the principles. I am glad that we did not have to work on a imaginary problem again...</i>	#21

Table B.3 Reasoning on DPS: Participant 2

Coping strategy	Reasoning	Quotation	Number
DPS- Use it	Blaming	Blogger: I like the idea of blogging and did not have problems mastering it. The Blogger website, however, I did not like. I do not think to implement it somewhere in future - will use the survey-tool in WebCT for this purpose rather.	#1
	Made suggestion	During the past few weeks I have mostly completed all subject material, as well as the WebCT course for DBR for next year. I also had to do many feedbacks and discussions at our faculty regarding Partners and everything we did. I am mostly satisfied with the subject material, but have a huge problem in the sense that I have not really received any true criticism, feedback or whatever you would like to call it.	#2
	Perception positive	Camtasia: What an excellent little application for use in ICT! I found it easy to master and have used it for a few movie clips - will definitely use it for many more typical student problems.	#3
		What an enjoyable day!! To the telematic team: I do enjoy this process immensely!! The way in which we did the ADDIE model introduction made a lot of sense, because we this is something that you can do via internet searches and it also gave us lots of practise in many other things (teamwork/ppt/present etc.) The blueprint seems to be lots of work, as I expected from the discussions on the design phase. It helps to talk to various people about what you want to do, and I am sure that the next workshops will also help us in this process.	#4
		WebCT: Nice hands-on session! At last we are creating our courses!	#5
		Respondus: Respondus was easy to master and to use. I have used it for all my web tests with success	#6
		WebCT: The mastering process was handled very good by ... (&kie) and I enjoyed working (and still enjoy working) in WebCT. Personally I liked the pace, but I can understand that less computer literate people may have problems coping. I am trying to implement as many of WebCT's elements as possible in my course - almost all aspects are working fairly well at this stage - maybe it is a bit early in the semester to truly comment on this.	#7
	Unsure	I still have reservations about Perception - it seems to be a bit complicated, again only for shorter question types - I see there is an essay option as well and will look into it, to see how it can help me to mark programming.	#8



Table B.3 Reasoning on DPS: Participant 2 (cont.)

Coping strategy	Reasoning	Quotation	Number
DPS- Use it	User friendly	<i>Respondus has got my vote - I created a nice activity, making use of Respondus for the self tests, as well as a short formal assessment.</i>	#9
		Respondus <i>Respondus was easy to master and to use. I have used it for all my web tests with success.</i>	#10

Table B.4 Reasoning on SU: Participant 2

Coping strategy	Reasoning	Quotation	Number
SU	Blaming Perception positive	Front Page: <i>I did not have problems in mastering FrontPage, but many problems with the program (software) itself, and therefore did not incorporate it in my course (Used powerpoint in stead) I will definitely use it in future, because I think it is a powerful application!</i> Comment: Cognitive decision making- look for another way to solve the problem with software	#1
		Blogger: <i>I like the idea of blogging and did not have problems mastering it. The Blogger website, however, I did not like . I do not think to implement it somewhere in future - will use the survey-tool in WebCT for this purpose rather.</i> Comment: Cognitive decision making- use another option- reasoning sound	#2
	Perception positive	Perception: <i>I found Perception really difficult to use and did not spend enough time on mastering the program. I, however, understand that it is a very powerful program with many excellent options.</i> <i>I did not implement it in my course at all at this stage. If I have enough time, I will investigate the application further in more detail.</i>	#3
		Corel Draw: <i>I have not used Corel Draw a lot, since I know Adobe Photoshop already. In general I think a basic knowledge of a drawing package is important in instructional design - even if only for some basics.</i>	#4
		<i>The way in which we did the ADDIE model introduction made a lot of sense, because we this is something that you can do via internet searches and it also gave us lots of practise in many other things (teamwork/ppt/present etc.)</i>	#5
		<i>What can you say about the videos?? What fun! And I am sure that we have learned lots of NOt to's in the process!</i>	#6
		<i>Very interesting information - it helps to understand the important facts to remember when creating not only video clips, but any type of graphics.</i>	#7

Table B.4 Reasoning on SU: Participant 2 (cont.)

Coping strategy	Reasoning	Quotation	Number
SU	Blaming Perception positive	<i>This was a fun exercise to introduce Corel's many graphic options. I know, however, that this is a massive program, with lots and lots of nice things that one can do and therefor it will take more than these 6 months for us to really be able to use it to its fullest potential. Maybe we can have little things to do in it every now and then, each time challenging us to discover something else about the program?</i>	#8
		<i>I also have a better understanding of what is needed in the blueprints, but believe that this will be a work in progress - therefor I am looking forward to discuss it with the other partners, to see what each one plan to incorporate in their courses.</i>	#9
		<i>The past week was a bit hectic for me! Respondus has got my vote - I created a nice activity, making use of Respondus for the self tests, as well as a short formal assessment. I still have reservations about Perception - it seems to be a bit complicated, again only for shorter question types - I see there is an essay option as well and will look into it, to see how it can help me to mark programming.</i>	#10
		<i>During the past few weeks I have mostly completed all subject material, as well as the WebCT course for ... for next year. I also had to do many feedbacks and discussions at our faculty regarding Partners and everything we did. I am mostly satisfied with the subject material, but have a huge problem in the sence that I have not really received any true critisism, feedback or whatever you would like to call it. Even yesterday's feedback session did not help me much in this regard... I think that everybody is at this stage too involved in their own work to really sit down and give time and concentration for somebody else's work. And I am a bit worried of just going into class next year - hoping everything will work and that I have planned properly for all possible scenarios. But, at this stage it seems as if it is what is going to happen. Then the students are going to hit me with it!!! <i>I liked the set of criteria though, because it reminded me of a few things that I forgot about (so it seems as if I am my own best 'feedbacker') ... gave me a nice idea or two, that I will still include on WebCT. I have to present an overview of the course at the faculty on Monday, and hope to get some meaningful feedback after that. Up to date I had no comments from any colleagues on the course - not even from those that can use the subject material. I know that the main reason is the fact that everybody is overworked and had to mark papers etc. But now it is quieter, and some of them are starting to think about next year. So hopefully...</i></i>	#11



Table B.4 Reasoning on SU: Participant 2 (cont.)

Coping strategy	Reasoning	Quotation	Number
SU	Perception positive	<i>The possibilities of WebCT as test organizer is amazing! I can see many self-tests, pre-tests, surveys etc. being done here for my course as well. I still cannot see that I will use it to replace the two main semester tests, because of its limitations, but maybe I just do not know enough about this tool yet.</i>	#12
		<i>Assessment... I am not good at short questions at all! But after playing with Respondus for a while, I can see a major advantage of it's use for shorter assessments, as well as self-assessments and I will try to include it in the planned activities for the course. It is still a lot of work to transfer existing questions to it, but I am sure that shortcuts will be developed soon!</i>	#13
		<i>WebCT: The mastering process was handled very good by ... (&kie) and I enjoyed working (and still enjoy working) in WebCT. Personally I liked the pace, but I can understand that less computer literate people may have problems coping.</i>	#14

Table B.5 Reasoning on POS: Participant 2

Coping strategy	Reasoning	Quotation	Number
POS- Will use it in future	Made Suggestion	<i>Short and sweet! Very interesting information - it helps to understand the important facts to remember when creating not only video clips, but any type of graphics. It may be a good idea to have this session again later during the course, after we have worked with graphics more, and more people will understand the basic ideas behind it.</i>	#1
	Perception positive	<i>The way in which we did the ADDIE model introduction made a lot of sense, because we this is something that you can do via internet searches and it also gave us lots of practise in many other things (teamwork/ppt/present etc.)</i>	#2
	User friendly Perception positive	<i>Camtasia is a really cool tool - Will definitely use it or something similar in future and try to sell it to our faculty!!!</i>	#3
POS- Mention the positive	Enjoyable	<i>What can you say about the videos?? What fun! And I am sure that we have learned lots of NOt to's in the process! One day (when I am a grown-up) maybe I will also be able to create a nice video for my students...</i>	#4
	Made suggestion	<i>This was a fun exercise to introduce Corel's many graphic options. I know, however, that this is a massive program, with lots and lots of nice things that one can do and therefor it will take more than these 6 months for us to really be able to use it to its fullest potential. Maybe we can have little things to do in it every now and then, each time challenging us to discover something else about the program?</i>	#5
	Perception positive	<i>The way in which we did the ADDIE model introduction made a lot of sense, because we this is something that you can do via internet searches and it also gave us lots of practise in many other things (teamwork/ppt/present etc.)</i>	#6
		<i>What and enjoyable day!! To the telematic team: I do enjoy this process immensely!!</i>	#7
		<i>The blueprint seems to be lots of work, as I expected from the discussions on the design phase. It helps to talk to various people about what you want to do, and I am sure that the next workshops will also help us in this process.</i>	#8

Table B.6 Reasoning on OPT: Participant 2

Coping strategy	Reasoning	Quotation	Number
OPT- Things will work out	Made suggestion	<i>During the past few weeks I have mostly completed all subject material, as well as the WebCT course for DBR for next year. I also had to do many feedbacks and discussions at our faculty regarding Partners and everything we did. I am mostly satisfied with the subject material, but have a huge problem in the sence that I have not really received any true critisism, feedback or whatever you would like to call it. Even yesterday's feedback session did not help me much in this regard... I think that everybody is at this stage too involved in their own work to really sit down and give time and concentration for somebody else's work. And I am a bit worried of just going into class next year - hoping everything will work and that I have planned properly for all possible scenarios. But, at this stage it seems as if it is what is going to happen. Then the students are going to hit me with it!!!</i>	#1
	Perception positive	<i>The blueprint seems to be lots of work, as I expected from the discussions on the design phase. It helps to talk to various people about what you want to do, and I am sure that the next workshops will also help us in this process.</i>	#2
		<i>It was good to revisit the blueprints, I am sure that we all will eventually be sure how to do it!</i> Comment: Positive thinking	#3
		WebCT: <i>The mastering process was handled very good by Annette (&kie) and I enjoyed working (and still enjoy working) in WebCT. Personally I liked the pace, but I can understand that less computer literate people may have problems coping.</i> <i>I am trying to implement as many of WebCT's elements as possible in my course - almost all aspects are working fairly well at this stage - maybe it is a bit early in the semester to truly comment on this.</i>	#4
		Front Page: <i>I did not have problems in mastering FrontPage, but many problems with the program (software) itself, and therefore did not incorporate it in my course (Used powerpoint in stead) I will definitely use it in future, because I think it is a powerful application!</i> Comment: Cognitive decision making- look for another way to solve the problem with software	#5
	Enjoyable	<i>What can you say about the videos?? What fun! And I am sure that we have learned lots of NOt to's in the process! One day (when I am a grown-up) maybe I will also be able to create a nice video for my students...</i>	#6



Table B.6 Reasoning on OPT: Participant 2 (cont.)

Coping strategy	Reasoning	Quotation	Number
OPT- Will be able to use it	Perception positive	Camtasia: <i>What an excellent little application for use in ICT! I found it easy to master and have used it for a few movie clips - will definitely use it for many more typical student problems.</i> <i>Comment: See advantages for use in own field. Think meta-cognitively.</i>	#7
		Video: <i>I have completed the video-thing yet... Mainly because of time - I have gone through the planning and preparation phases and found it interesting. Hope to complete it later in this semester, because there is a definite application possibility of this in the subject developed for Partners@Work.</i> <i>Comment: Sien die toepassingsmoontlikheid daarvan in vakgebied.</i>	#8
		Front Page: <i>I did not have problems in mastering FrontPage, but many problems with the program (software) itself, and therefore did not incorporate it in my course (Used powerpoint in stead) I will definitely use it in future, because I think it is a powerful application!</i>	#9
		<i>This was a good day!</i> <i>I do like new things, and therefor are looking forward to try out the e-portfolio idea - I can see how this can be of tremendous help in IT subjects, where most of the student's work is in electronic format in any case - and must always be printed out.</i>	#10
		<i>What can you say about the videos?? What fun! And I am sure that we have learned lots of NOt to's in the process! One day (when I am a grown-up) maybe I will also be able to create a nice video for my students...</i>	#11
		<i>Hot Potatoes looks like a tool that can be applied easily and that will solve my self-test problems.</i>	#12
		<i>I will try Wimba, it looks like a good little application for teaching!</i>	#13
		<i>The possibilities of WebCT as test organizer is amazing! I can see many self-tests, pre-tests, surveys etc. being done here for my course as well. I still cannot see that I will use it to replace the two main semester tests, because of its limitations, but maybe I just do not know enough about this tool yet.</i>	#14
		<i>Assessment... I am not good at short questions at all! But after playing with Respondus for a while, I can see a major advantage of it's use for shorter assessments, as well as self-assessments and I will try to include it in the planned activities for the course. It is still a lot of work to transfer existing questions to it, but I am sure that shortcuts will be developed soon!</i>	#15



Table B.7 Reasoning on Use humour: Participant 2

Coping strategy	Reasoning	Quotation	Number
Use humour	Enjoyable	<i>One day (when I am a grown-up) maybe I will also be able to create a nice video for my students...</i>	#1
	Made suggestion	<i>I think some of us could have done with more time on both, but am sure that we will all live!!</i>	#2
		<i>Short and sweet!</i> <i>Very interesting information - it helps to understand the important facts to remember when creating not only video clips, but any type of graphics. It may be a good idea to have this session again later during the course, after we have worked with graphics more, and more people will understand the basic ideas behind it.</i>	#3
		<i>And I am a bit worried of just going into class next year - hoping everything will work and that I have planned properly for all possible scenarios. But, at this stage it seems as if it is what is going to happen. Then the students are going to hit me with it!!!</i>	#4
		<i>I liked the set of criteria though, because it reminded me of a few things that I forgot about (so it seems as if I am my own best 'feedbacker')</i>	
	Perception positive	<i>I think some of us could have done with more time on both, but am sure that we will all live!!</i>	#5
<i>One day (when I am a grown-up) maybe I will also be able to create a nice video for my students...</i>		#6	

Table B.8 Reasoning on SUPA: Participant 2

Coping strategy	Reasoning	Quotation	Number
SUPA-Ask for people's opinions	Made suggestion	<i>I also had to do many feedbacks and discussions at our faculty regarding Partners and everything we did. I am mostly satisfied with the subject material, but have a huge problem in the sence that I have not really received any true criticism, feedback or whatever you would like to call it. Even yesterday's feedback session did not help me much in this regard... I think that everybody is at this stage too involved in their own work to really sit down and give time and concentration for somebody else's work.</i>	#1
SUPA-Discuss it with others	Perception positive	<i>The blueprint seems to be lots of work, as I expected from the discussions on the design phase. It helps to talk to various people about what you want to do, and I am sure that the next workshops will also help us in this process.</i>	#2
		<i>I also have a better understanding of what is needed in the blueprints, but believe that this will be a work in progress - therefor I am looking forward to discuss it with the other partners, to see what each one plan to incorporate in their courses.</i>	#3
SUPA-Learn from others	Perception positive	<i>...gave me a nice idea or two that I will still include on WebCT.</i>	#4
		<i>The past few days have impressed on me the amazing range of tools available to enhance the teaching experience for lecturer,as well as for students! AND all on our doorstep. It is as if there is this treasure that I either did not know about, or did not go to the trouble to explore as yet.</i>	#5
		<i>The show and tell was a good session - I have learnt something from each person presenting, and it is so good to see how different people are, in the process opening up new ideas!</i>	#6
		<i>I learn a lot from the show and tell sessions - other people have good ideas and because they have struggled with various things already, their solutions make it much easier for me!</i>	#7
		<i>Personally I have learnt a lot from the feedback of the Partners on my work so far. Thanks! And as always, I have learnt more from the show and tell's of the other people in my group! This is a good exercise for me each Tuesday.</i>	#8
		<i>The show and tell, as usual, was good - feedback from other partners help me a lot and I learn even more from the show and tell's of the other partners!</i>	#9
		<i>Feedback from other partners, as usual, really packed with nice ideas.</i>	#10
		<i>The show and tell was, as always, really good- we learn so much from each other! And I like the discussions around what was done.</i>	#11

Table B.9 Range of perceived abilities: Participant 2

Able to use it	Need to master part of it	Empowering	Clueless	Did not use it
✓	✓	✓		

Table B.10 Reasoning perceived ability: Participant 2

Reasoning	Quotation	Number
Able to use it	<p>Camtasia What an excellent little application for use in ICT! I found it easy to master and have used it for a few movie clips - will definitely use it for many more typical student problems. Comment: See advantages for use in own field. Think meta-cognitively.</p>	#1
	<p>Front Page I did not have problems in mastering FrontPage, but many problems with the program (software) itself, and therefore did not incorporate it in my course (Used powerpoint in stead) I will definitely use it in future, because I think it is a powerful application! Comment: Cognitive decision making- look for another way to solve the problem with software</p>	#2
	<p>Blogger I like the idea of blogging and did not have problems mastering it. The Blogger website, however, I did not like . I do not think to implement it somewhere in future - will use the survey-tool in WebCT for this purpose rather. Comment: Cognitive decision making- use another option-reasoning sound</p>	#3
	<p>Yahoo Messenger An excellent way to keep in contact with people! Mastering easy!</p>	#4
	<p>During the development phase of the Partners@Work process, several electronic and web-enabling elements were developed - each with the aim of addressing one/more of abovementioned challenges.</p>	#5
	<p>Respondus Respondus was easy to master and to use. I have used it for all my web tests with success.</p>	#6
	<p>WebCT The mastering process was handled very good by ... (&kie) and I enjoyed working (and still enjoy working) in WebCT. Personally I liked the pace, but I can understand that less computer literate people may have problems coping. I am trying to implement as many of WebCT's elements as possible in my course - almost all aspects are working fairly well at this stage - maybe it is a bit early in the semester to truly comment on this.</p>	#7



Reasoning	Quotation	Number
Empowering	Camtasia What an excellent little application for use in ICT! I found it easy to master and have used it for a few movie clips - will definitely use it for many more typical student problems. Comment: See advantages for use in own field. Think meta-cognitively	#8
	WebCT The mastering process was handled very good by ... (&kie) and I enjoyed working (and still enjoy working) in WebCT. Personally I liked the pace, but I can understand that less computer literate people may have problems coping. I am trying to implement as many of WebCT's elements as possible in my course - almost all aspects are working fairly well at this stage - maybe it is a bit early in the semester to truly comment on this.	#9
Need to master part of it	Perception I found Perception really difficult to use and did not spend enough time on mastering the program.	#10
	Videoconferencing I have no practical experience of videoconferencing (organizing it myself) and still am not sure how it can be applied in the current subject	#11
	Video I have completed the video-thing yet... Mainly because of time - I have gone through the planning and preparation phases and found it interesting. Hope to complete it later in this semester, because there is a definite application possibility of this in the subject developed for Partners@Work. Comment: Sien die toepassingsmoontlikheid daarvan in vakgebied.	#12

Appendix C

Outcomes of the analysis process: Participant 3

Table C.1	Coping strategies: Participant 3
Table C.1	Reasoning on CDM: Participant 3
Table C.2	Reasoning on DPS: Participant 3
Table C.3	Reasoning on CON: Participant 3
Table C.4	Reasoning on OPT: Participant 3
Table C.5	Reasoning on POS: Participant 3
Table C.6	Reasoning on SUPA: Participant 3
Table C.7	Range of perceived abilities: Participant 3
Table C.8	Reasoning perceived ability: Participant 3



Table C.1 Coping strategies: Participant 3

Possible strategies		Strategies used	
Active coping strategies	Problem focused coping	Cognitive decision making (CDM)	CDM- Thinking about ways to solve the problem
		Direct problem solving (DPS)	DPS- Attend workshops/training session DPS-Trial and error DPS-Self-study DPS-Experiment with it at home DPS-Work through the notes DPS-Use it
		Seeking understanding (SU)	
	Positive cognitive restructuring	Positivity (POS)	POS-Never give up POS- Will use it in future POS- Mention the positive
		Control (CON)	CON- Can handle it CON- Know how to
		Optimism (OPT)	OPT- Things will work out OPT- Will be able to do it/use it OPT- Self motivation
		Use humour	
	Distraction strategies	Distracting actions (DA)	
Physical release of Emotions (PRE)			
Avoidance strategies	Avoidant actions (AVA)		
	Repression (REP)		
	Wishful thinking (WISH)		
Support seeking strategies	Support for actions (SUPA)	SUPA- Discuss it with others SUPA- Learn from others	
	Support for feeling (SUPF)		

Table C.2 Reasoning on CDM: Participant 3

Coping strategy	Reasoning	Quotation	Number
CDM- Thinking about ways to solve the problem	Blaming	<i>Perception: Since my study material already contain Publisher-generated quizzes, I did not at all focus on mastering this technology, as I do not foresee using it in the near future</i>	#1
		<i>Video Conferencing: I did not use this technology due to time constraints; rather focused on other more important technologies for my programme. It does have an application in my field, although probably not an important one.</i>	#2
	Made suggestion	<i>Perception: Perception in TUT, I would have liked to see one or more sessions being devoted to it.</i>	#3
	Not used	<i>Respondus: Since my study material already contain Publisher-generated quizzes, I did not at all focus on mastering this technology, as I do not foresee using it in the near future</i>	#4
	Perception positive	<i>WebCT: The various sessions throughout the programme enabled me to gradually gain a grip on all the relevant parts and to use it in my programme development. The big emphasis on this technology was a strong point as it formed the backbone of my programme development and presentation.</i>	#5
		<i>FrontPage: ...s' training session was good. The continuous hands-on use of it throughout the Partners-programme (especially the Show-and-Tell sessions) helped a great deal to become more familiar with all its applications.</i>	#6
		<i>WebCT: On-line courses have so much more to offer my students in terms of resources, assessments and support than I was ever aware off.</i>	#7
		<i>WebCT: Excited about professional growth. Excited about personal growth. Excited to take what I learn back to my Dept and Faculty to help, support and motivate them to also take up the telematic challenge.</i>	#8
		<i>The session on Camtasia was for me a bit of playing-with-technology. I can see the possibilities of Camtasia, but don't think I will really use it in my subject. Still, it was just good to be exposed to it and to become aware of such an easy way to record on-screen images/activities., thanx for "freaking-out yourself" so that we could see the webcam application; you are a good "teacher" that makes learning a lot of fun!!</i>	#9
			<i>Camtasia: The training session and applications by other Partners were good fun. The application possibilities are clear, but not really in my field.</i>

Table C.2 Reasoning on CDM : Participant 3 (cont.)

Coping strategy	Reasoning	Quotation	Number
CDM- Thinking about ways to solve the problem	Perception positive	<i>The WebCT Tools workshop around the "CD-Rom" and "Student Presentation" tools provided good info. Although I can not, at this stage, foresee that it will be used in my current WebCT courses, it is just nice to know that such tools exist.</i>	#11
		<i>I enjoyed the presentations on ADDIE's Analysis component, as well as the hand-on session on E-Portfolios. It helped me a lot to focus my plans for A&P's telematic programme, as I realised that I have been thinking too wide and too vaguely about it. In the coming days and weeks I want to narrow my plans a lot more and that is where the Needs Analysis Assignment will help a lot.</i> <i>Each time that we look at a new component of WebCT I am more impressed and excited about its possibilities for my telematic and...-programme.</i>	#12
		<i>The Web has very good digital content resources directly related to the subject I teach. The current textbook's web-resources are very informative and include quizzes, ...atlases, course outlines, flashcards and animations. I am considering to change the prescribed textbook for 2005, as at present I'm using different ... textbooks for three courses. McGraw-Hill has very good textbooks that are fairly affordable and applicable to all my courses. An added advantage is the availability of WebCT-resources, CD-ROMs and On-line resources (student & Lecturer). If I can use only 1 or 2 textbooks with similar resources from a single publisher, it will be easier to revert to a telematic teaching style in all my subjects, especially in terms of assessment and class presentations.</i>	#13
		<i>The video conference with... was the very first one that I was actually participating in. I got some insight in the technical and organisational stuff that go into such an event. Although I didn't ask a question, it still was good to observe the chairperson's... role, and to get a feel for face-to-face interactions over this medium. Good experience.</i>	#14
		<i>I'm excited about the possibilities and opportunities that these digital content resources offer for... teaching!!</i>	#15
		<i>... introduction to Video conferencing helped me a lot to recognise the potential "valid" applications of this technology. My student groups are all based on a single campus, so for now I don't foresee that video conferencing will be really used in my courses.</i>	#16
		<i>However, as I'm very involved with our Faculty's research and postgraduate students, it is clear to me that video conferencing can become a powerful tool to bring international experts to our campus without actually going to extreme expenses to physically invite such a person.</i>	#17

Table C.2 Reasoning on CDM : Participant 3 (cont.)

Coping strategy	Reasoning	Quotation	Number
CDM- Thinking about ways to solve the problem	Perception positive	<i>Various types of WebCT quizzes are provided for each study module. These quizzes allow students to complete specific assessments throughout the course whenever they have worked through the relevant learning units.</i>	#18
		<i>During the Partners@Work 2004 programme I developed WebCT-based course material that was divided into a number of study modules and systematic learning units. The learning units provide clear guidance to the students with regards to study objectives, study activities and assessments. Internet links appear in most of the learning units to illustrate specific themes and/or to provide additional theoretical information.</i>	#19

Table C.3 Reasoning on DPS: Participant 3

Coping strategy	Reasoning	Quotation	Number
DPS- Attend workshops/training session	Perception positive Not used	Video: <i>The training sessions (hands-on one-minute presentations & script-writing session) were good fun and informative</i> <i>Attend training session</i>	#1
		Video Conferencing: <i>The training sessions and actual applications (e.g... lecture) were good and very informative.</i> <i>Attend training sessions and actual video conference lectures.</i>	#2
		Camtasia: <i>The training session and applications by other Partners were good fun. The application possibilities are clear, but not really in my field.</i> Strategies to master the technology <i>Attend training session</i> <i>This technology does not have a real/significant application in my field</i>	#3
	Perception positive Use it	WebCT: <i>Attend all the training sessions</i>	#4
	Perception positive Use it	FrontPage: <i>.... training session was good. . The continuous hands-on use of it throughout the Partners-programme (especially the Show-and-Tell sessions) helped a great deal to become more familiar with all its applications.</i>	#5
		Blogger: <i>Attend training sessions</i>	#6

Table C.3 Reasoning on DPS : Participant 3 (cont.)

Coping strategy	Reasoning	Quotation	Number
DPS-Self-study	Perception positive	<i>I was in ... when ... did the session on Perception. Thus, I had to work through the notes in my own time.</i>	#7
DPS-Work through the notes	Perception positive	<i>I had to work through the notes in my own time. This was not too difficult since the notes were clear</i>	#8
DPS-Experiment with it at home	Perception positive	<i>Camtasia: Play around a bit with it at home</i>	#9
DPS-Use it	Perception positive	<i>WebCT: Hands-on use during programme development and my ... studies</i>	#10
		<i>Camtasia: I would be able to use it.</i>	#11
		<i>CorelDraw: I used it to create banners for three different subjects on WebCT.</i>	#12
		<i>FrontPage: I feel comfortable with the use and application of most aspects.</i>	#13
		<i>I've enjoyed using Blogger to reflect on my experiences during the Partners-programme.</i>	#14
		<i>Blogger: Using it for my own reflections, but also to access the other Partners' reflections (those who actually did use it).</i>	#15
		<i>Blogger: I feel comfortable with the use and application of most aspects.</i>	#16
		<i>I've actually used it to develop a WebCT programme for my ...</i>	#17
		<i>The continuous hands-on use of it throughout the Partners-programme (especially the Show-and-Tell sessions) helped a great deal to become more familiar with all its applications.</i>	#18
<i>WebCT: Various sessions throughout the programme enabled me to gradually gain a grip on all the relevant parts and to use it in my programme development.</i>	#19		
DPS-Trial and error	Perception positive	<i>A lot of self-study and trial-and-error.</i>	#20

Table C.4 Reasoning on CON: Participant 3

Coping strategy	Reasoning	Quotation	Number
CON- Can handle it	Perception positive	<p><i>On a personal note I've made a conscious decision to work hard towards the Telematic ... and ... for all the courses I'm involved in. It is going to take much more than just the next year or so, but I'm motivated to eventually transform all my Dept's undergraduate ... and ... into a Telematic programme. There's so much to do (and want to do), and so little time!!!</i></p> <p>Comment: Self-motivation- check for examples with other partners- possible link with EI?</p>	#1
CON- Know how to	Perception positive	<p>Blogger: <i>I've enjoyed using Blogger to reflect on my experiences during the Partners-programme. This is probably as a result of being familiar with keeping personal fieldnotes during qualitative research projects.</i></p>	#2

Table C.5 Reasoning on OPT: Participant 3

Coping strategy	Reasoning	Quotation	Number
OPT- Things will work out	Perception positive	<p><i>I am excited about the time that lies ahead. Excited, and scared, to develop a telematic programme that will meet expectations. Excited about professional growth. Excited about personal growth. Excited to take what I learn back to my Dept and Faculty to help, support and motivate them to also take up the telematic challenge.</i></p> <p><i>But, I'm also a bit scared. Scared that others might have such high expectations of me that I will not be able to meet. Scared that I will not meet my own high standards. Scared that I might get alienated from my Dept.</i></p> <p><i>I want to keep going forward with the following motto: "Never give up".</i></p>	#1
OPT- Will be able to use it	Blaming	<p><i>Video Conferencing: I don't have any practical experience in applying it, but have a good idea of the preparations and requirements for actual sessions.</i></p>	#2
	Perception positive	<p><i>WebCT: Somehow it felt as if I could keep up without much difficulty. Just a month or so ago, it would have left me completely lost. Just shows you what a bit of first-hand experience can do to make one feel comfortable and at ease with a specific programme!!</i></p>	#3
OPT- Self motivation	Perception positive	<p><i>But now, it is time to focus on all the myriad tasks that still have to be accomplished before the end of this year. So, of to work we go!!!</i></p>	#4
		<p><i>I've heard the following saying some time ago that meant a lot to me, and hopefully to everyone reading this blog: "Excellence and beauty comes from passionately, motivated people". So, that's what I'm going to strive for in the coming days and weeks.</i></p>	#5



Table C.5 Reasoning on OPT: Participant 3 (cont.)

Coping strategy	Reasoning	Quotation	Number
OPT- Self motivation	Perception positive	<i>I was so impressed by the Show-and-Tell session. The progress and quality of ..., ... and ... course development are just astounding. If I just think back on what things look like a month or so ago, it is amazing what the Partners have learned and become skilled in. They once again motivated myself to work harder, smarter and with gusto.</i>	#6
		<i>During this week I've once again realised the privilege of being a Partner, but also the responsibility that comes with it. Even though my head often spins after a contact session due to all the new stuff I've learned, it remains exciting and challenging to be empowered on such a wide technology-front. There is no way that I will ever be the same lecturer as before the Partners-programme!!!</i>	#7
		<i>... 's continued training in specific WebCT tools was very helpful. For the first time I've actually not mind ... going at quite a fast pace through all the different sections. Somehow it felt as if can do to make one feel comfortable and at ease with a specific program!!! could keep up without much difficulty. Just a month or so ago, it would have left me completely lost. Just shows you what a bit of first-hand experience</i>	#8
		<i>I'm starting to realise that Partners@Work is challenging me as a person and lecturer to completely rethink my professional career path. Who knows where it will take me?</i>	#9
		<i>It is going to take much more than just the next year or so, but I'm motivated to eventually transform all my Dept's undergraduate ... and ... into a Telematic programme. There's so much to do (and want to do), and so little time!!!</i>	#10
		<i>In the coming days and weeks I want to narrow my plans a lot more and that is where the Needs Analysis Assignment will help a lot.</i>	#11
		<i>On-line courses have so much more to offer my students in terms of resources, assessments and support than I was ever aware off.</i>	#12

Table C.6 Reasoning on POS: Participant 3

Coping strategy	Reasoning	Quotation	Number
Pos- Never give up	Perception positive	<i>I want to keep going forward with the following motto: "Never give up".</i> Comment: Note positivity and self-motivation- motto- "Never give up"	#1
		<i>At the end of Friday I felt a bit overwhelmed and stressed-out by all the assignments that we have to complete within the next few days. I will just have to keep my nerve, to not give up, and to work like hell!!</i>	#2
		<i>It made me realise that from now onwards we will have to, and definitely want to, work on our own proposed instructional programmes. The challenge is big but I am excited about the process.</i>	#3
Pos- Will use it in future	Perception positive	<i>Each time that we look at a new component of WebCT I am more impressed and excited about its possibilities for my telematic and...-programme.</i>	#4
		<i>I'm excited about the possibilities and opportunities that these digital content resources offer for 1st year ... teaching!!</i>	#5
		<i>The Respondus-session was very good. It gave us another "tool" to develop and implement our telematic courses. It really feels as if we are now moving forward and being empowered.</i>	#6
		<i>Especially ... Digital Content presentation showed me the vast and untapped resources that lecturers can use. It was opening up a new world of possibilities for me that I'm very excited about. Cannot wait to really work on my subject's programme.</i>	#7
		<i>However, as I'm very involved with our Faculty's research and postgraduate students, it is clear to me that video conferencing can become a powerful tool to bring international experts to our campus without actually going to extreme expenses to physically invite such a person.</i>	#8
		<i>Wimba was great fun!! I can not wait to send a voice E-mail to some colleagues and see their reactions. The application possibilities seem endless. Will definitely use it, not just for play, but for some "real" applications.</i> <i>I've heard the following saying some time ago that meant a lot to me, and hopefully to everyone reading this blog: "Excellence and beauty comes from passionately, motivated people". So, that's what I'm going to strive for in the coming days and weeks.</i>	#9

Table C.6 Reasoning on POS : Participant 3 (cont.)

Coping strategy	Reasoning	Quotation	Number
Pos-Mention the positive	Perception positive	<i>This workshop really opened up a whole new world of exciting and amazing education technologies - WOW!! After hearing about and experiencing some of the wonderful opportunities that all the Partners will receive during the next 12 months, I couldn't but realise the wonderful opportunity that I have been granted to be a Partner and to be nominated on the P@W programme.</i>	#10
		<i>It is such a privilege to be a Partner. Every day is just an amazing step forward. I am learning an immense amount of new things. I am getting to know a wonderful group of people who are all passionate about teaching and contributing to the life of students.</i>	#11
		<i>Although I didn't ask a question, it still was good to observe the chairperson's ... role, and to get a feel for face-to-face interactions over this medium. Good experience.</i>	#12
		<i>I found... and ... overviews very helpful today. ...'s slide show regarding ADDIE really helped me to get to grips with all the ADDIE steps and the various activities that accompany it. It also gave good guidance with regards to the most important components of the learner guide's blueprint.</i>	#13
		<i>The WebCT QuizTool session was a good exercise and I have once again learned a lot of useful skills!!</i>	#14

Table C.7 Reasoning on SUPA: Participant 3

Coping strategy	Reasoning	Quotation	Number
SUPA-Discuss it with others	Perception positive	<i>Interactive discussions with all the other Partners during contact sessions and while working from home.</i>	#1
		<i>The continuous hands-on use of it throughout the Partners-programme (especially the Show-and-Tell sessions) helped a great deal to become more familiar with all its applications.</i>	#2
SUPA-Learn from others	Perception positive	<i>Learn from stuff that other Partners did in their programme development, and which could be used in my own programme</i>	#3
		<i>I've enjoyed the group-feedback we had to present on the basic steps of the ADDIE-model. Every presentation brought something new and valuable on the instructional design process.</i>	#4
		<i>Ask other Partners regarding specific applications that they've used</i>	#5
		<i>It is such a privilege to be a Partner. Every day is just an amazing step forward. I am learning an immense amount of new things.</i>	#6



Table C.7 Reasoning on SUPA: Participant 3

Coping strategy	Reasoning	Quotation	Number
SUPA-Learn from others	Perception positive	<i>I've enjoyed the opportunity to "show-and-tell" the stuff that I've been working on for the past month or so. Also, it was good to see that .. has overcome ...r initial "manual-troubles". ... material has an inherent "friendliness" in terms of Frontpage theme colours, navigation style, content presentation, video clip, etc. I'm convinced... students should just love to do the subject, and if they don't, they will truly miss out on an exciting learning journey.</i>	#7
		<i>... 's continued training in specific WebCT tools was very helpful. For the first time I've actually not mind ... going at quite a fast pace through all the different sections.</i>	#8
		<i>Something on the side: Some of my fellow partners seem to be just, or even more, overwhelmed by all the new stuff that we want to take in. However, I also see some real caring and supportive human interactions between us. That is really great to see that we don't allow ourselves to get so "technology" focussed, that we forget to bring some "humanness" into all the hardware, software and cyberspace. I'm a person-person and are fortunate to learn a lot about being "human" from all the Partner</i>	#9
		<i>Camtasia: Observe its use by other Partners</i>	#10
		<i>Camtasia: The training session and applications by other Partners were good fun. The application possibilities are clear, but not really in my field.</i>	#11
		<i>... 's continued training in specific WebCT tools was very helpful. For the first time I've actually not mind ... going at quite a fast pace through all the different sections.</i>	#12
		<i>Every presentation brought something new and valuable on the instructional design process. It made me realise that from now onwards we will have to, and definitely want to, work on our own proposed instructional programmes. The challenge is big but I am excited about the process.</i>	#13
		<i>Also, each time I learn so much from my fellow Partners about life itself. Partners@Work is truly a life-changing and life-enriching experience.</i>	#14

Table C.8 Range of perceived abilities: Participant 3

Able to use it	Need to master part of it	Empowering	Clueless	Did not use it
✓	✓	✓		



Table C.9 Reasoning perceived ability: Participant 3

Reasoning	Quotation	Number
Able to use it	Camtasia: <i>I would be able to use it.</i>	#1
	Video conferencing <i>I don't have any practical experience in applying it, but have a good idea of the preparations and requirements for actual sessions.</i>	#2
	Corel Draw <i>I can use it, although I'm sure there is a lot more possibilities that I'm unfamiliar with.</i>	#3
	FrontPage <i>I feel comfortable with the use and application of most aspects</i>	#4
	Blogger: <i>I feel comfortable with the use and application of most aspects.</i>	#5
	Respondus: <i>I would be able to use it.</i>	#6
	WebCT <i>During the Partners@Work 2004 programme I developed WebCT-based course material that was divided into a number of study modules and systematic learning units.</i>	#7
Empowering	WebCT <i>Quite well. I can independently change stuff, do problem solving, assist students to interact with my material, and facilitate other lecturers who want to develop WebCT programmes for their own courses.</i>	#8
Need to master part of it	Video <i>I would be able to use it with some practice.</i>	#9
	Perception: <i>I would be able to use it, but do not feel comfortable or confident in my ability to apply it.</i>	#10

Appendix D

Outcomes of the analysis process: Participant 4

Table D.1	Coping strategies: Participant 4
Table D.2	Reasoning on CDM: Participant 4
Table D.3	Reasoning on DPS: Participant 4
Table D.4	Reasoning on SU: Participant 4
Table D.5	Reasoning on POS: Participant 4
Table D.6	Reasoning on OPT: Participant
Table D.7	Reasoning on SUPA: Participant 4
Table D.8	Range of perceived abilities: Participant 4
Table D.9	Reasoning perceived ability: Participant 4



Table D.1 Coping strategies: Participant 4

Possible strategies		Strategies used	
Active coping strategies	Problem focused coping	Cognitive decision making (CDM)	CDM- Thinking about ways to solve the problem
		Direct problem solving (DPS)	DPS- Experiment at home DPS- Practice DPS- Put time in to use it DPS- Use it
		Seeking understanding (SU)	SU- What could be learned from this
	Positive cognitive restructuring	Positivity (POS)	POS- Will use it in future
		Control (CON)	
		Optimism (OPT)	OPT- Will be able to use it
		Use humour	
Distraction strategies	Distracting actions (DA)		
	Physical release of Emotions (PRE)		
Avoidance strategies	Avoidant actions (AVA)		
	Repression (REP)		
	Wishful thinking (WISH)		
Support seeking strategies	Support for actions (SUPA)	SUPA- Ask for help SUPA- Get help from ID	



Table D.2 Reasoning on CDM: Participant 4

Coping strategy	Reasoning	Quotation	Number
CDM- Thinking about ways to solve the problem	Blaming Suggestion User friendly Perception positive	Blogger <i>It seems that I am very unfortunate in trying to block. The past three times I was thrown off the network time and again - I now rather try to write my blog in word and copy and paste it.</i>	#1
		Perception <i>Also the perception program seems to be a very powerful system, but it is unfortunate that we did not have enough time to practice in class due to the test that needed to be written in the IC</i>	#2
		Respondus <i>I found last weeks respondus a very useful tool and easy to use.</i>	#3
		<i>Camtasia seems to be an interesting tool. but at this stage I will simply take notice of it and maybe paly around a little with it. I doubt, however, whether I will use it for my project.</i>	#4

Table D.3 Reasoning on DPS: Participant 4

Coping strategy	Reasoning	Quotation	Number
DPS- Experiment at home	Perception positive	<i>The session on hot potatoes was interesting and informative and I might explore using it.</i>	#1
DPS- Practice	Perception positive	<i>Some was easier than others. I have spent more time on practicing those that I found harder and also sought help from my ID and other partners if necessary.</i>	#2
DPS- Use it	Perception positive	<i>I have used all of the listed technologies except for camtasia and video conferencing. I am, however, going to use both these during the course of the semester - camtasia for a training 'video' and videoconferencing for a conference with colleagues on other campuses.</i>	#3
		<i>I think I have definitely managed to cope with the technologies listed. Actually it is more than coping, because I enjoy it tremendously.</i>	#4
DPS- Put time in to use it	Perception positive	<i>Here I am, one of the people to whom blogging and the data thereof is so important, since I will need it for my research, and I neglected to blog for quite some time. I will try to make up for it though with a brief overview of the past few weeks as I experienced it.</i>	#5
		<i>I have spent more time on practicing those that I found harder and also sought help from my ID and other partners if necessary.</i>	#6
		<i>.I am, however, going to use both these during the course of the semester - camtasia for a training 'video' and videoconferencing for a conference with colleagues on other campuses.</i>	#7

Table D.4 Reasoning on SU: Participant 4

Coping strategy	Reasoning	Quotation	Number
SU- What could be learned from this	Perception positive	<i>The group discussion on needs analysis was useful and insightful, as well as the presentation on the ADDIE (Daisy) model. Throughout the day I enjoyed the activities and groupwork, learned a lot and had lots of fun. It was great to have material presented in the correct way! Today also made me realise once again how important it is to bring fun into learning and I will keep that in mind with the designing of my course.</i> Comment: Importance of fun in presentation and learning	#1



Table D.5 Reasoning on POS: Participant 4

Coping strategy	Reasoning	Quotation	Number
POS- Will use it in future	Perception positive	<i>The blogging from one's e-mail seems interesting and I will definitely try it out at some time.</i>	#1
		<i>I have used all of the listed technologies except for camtasia and video conferencing. I am, however, going to use both these during the course of the semester - camtasia for a training 'video' and videoconferencing for a conference with colleagues on other campuses.</i>	#2
		<i>The session on hot potatoes was interesting and informative and I might explore using it. I also enjoyed the hands-on session on Wimba and has already sent out one or two voice e-mails.</i>	#3

Table D.6 Reasoning on OPT: Participant 4

Coping strategy	Reasoning	Quotation	Number
OPT- Will be able to use it	Made suggestion	<i>I found last weeks respondus a very useful tool and easy to use. Also the perception program seems to be a very powerful system, but it is unfortunate that we did not have enough time to practice in class due to the test that needed to be written in the IC</i>	#1
	Perception positive	<i>At first I was a little scared and even a little overwhelmed with the new technologies, since it was the first time that I have experienced it. I was, however, also excited at the prospect of exploring these technologies and becoming empowered. I realized that I will benefit in obtaining these skills and once I have started mastering these skills / technologies it felt like a huge accomplishment and value-added.</i>	#2
		<i>I am excited to start with my e-portfolio and although we have a lot of homework I feel that I learn so much. I also know that many hard work still lies ahead but I am SO excited about my project and P@W! But enough for now, let me start with that homework.</i>	#3



Table D.7 Reasoning on SUPA: Participant 4

Coping strategy	Reasoning	Quotation	Number
SUPA- Ask for help	Perception positive	<i>Some was easier than others. I have spent more time on practicing those that I found harder and also sought help from my ID and other partners if necessary.</i>	#1
SUPA- Get help from ID	Perception positive	<i>I am very thankful to who caught up with me on Thursday everything that I have missed last week. I am looking forward to using frontpage and Corel who both seem to be very helpful programs.</i>	#2
		<i>:...also sought help from my ID and other partners if necessary.</i>	#3
SUPA- Learn from others	Perception positive	<i>The show-and-tell sessions of the past two or three weeks were really interesting and useful. I learn a lot from the other partners' presentations and it's interesting to see how each one's focus differs. It is also amazing to see how supportive and willing everyone is to help the others.</i>	#4
		<i>The show and tell is always valuable and interesting. I furthermore enjoyed the discussion on the various issues regarding the partners programme, as well as the brainstorming session and think this is very important and useful. A few great and honest ideas emerged from this session and I am looking forward to have another session in this regard. The information that flowed from this session will be very valuable for my planned research.</i>	#5

Table D.8 Range of perceived abilities: Participant 4

Able to use it	Need to master part of it	Empowering	Clueless	Did not use it
✓		✓		



Table D.9 Reasoning perceived ability: Participant 4

Reasoning	Quotation	Number
Able to use it	<i>I have used all of the listed technologies except for camtasia and video conferencing. I am, however, going to use both these during the course of the semester - camtasia for a training 'video' and videoconferencing for a conference with colleagues on other campuses.</i>	#1
Empowering	<p><i>I think I have definitely managed to cope with the technologies listed. Actually it is more than coping, because I enjoy it tremendously.</i></p> <p>Comment: Positive thinking</p>	#2
	<p>For the subject Public Human Resource Management I chose to implement on-line assignments. In the past the submission of assignments caused numerous problems with especially assignments that got lost and late assignments. With the implementation of on-line assignments in WebCT these problems were ruled out since a student needs to submit an assignment before the due date, in order for the computer not to reject it. Through results from a questionnaire completed by the students it became eminent that students have made use of internet resources more often than they would have with traditional learning. It is furthermore a method to save time and money with assignments that now don't have to be printed out before submission any more.</p> <p>The aim with the development of this course was not to improve the pass rate as such but rather to enhance and enrich the learning experience. Through the feedback obtained from the students it became evident that they regarded this experience as empowering and enriching.</p>	#3

Appendix E

Outcomes of the analysis process: Participant 5

Table E.1	Coping strategies: Participant 5
Table E.2	Reasoning on CDM: Participant 5
Table E.3	Reasoning on DPS: Participant 5
Table E.4	Reasoning on POS: Participant 5
Table E.5	Reasoning on CON: Participant 5
Table E.6	Reasoning on AVA: Participant 5
Table E.7	Reasoning on SUPA: Participant 5
Table E.8	Range of perceived abilities: Participant 5
Table E.9	Reasoning perceived ability: Participant 5



Table E.1 Coping strategies: Participant 5

Possible strategies		Strategies used	
Active coping strategies	Problem focused coping	Cognitive decision making (CDM)	CDM- Thinking about ways to solve the problem
		Direct problem solving (DPS)	DPS- Attend workshops/training session DPS- Practice DPS- Use it
		Seeking understanding (SU)	
	Positive cognitive restructuring	Positivity (POS)	POS- Will use it in future
		Control (CON)	CON- Know how to
		Optimism (OPT)	
		Use humour	
Distraction strategies	Distracting actions (DA)		
	Physical release of Emotions (PRE)		
Avoidance strategies	Avoidant actions (AVA)	AVA- Did not try to implement AVA- Will investigate later AVA-Blaming other things	
	Repression (REP)		
	Wishful thinking (WISH)		
Support seeking strategies	Support for actions (SUPA)	SUPA- Ask for help SUPA- Get help from ID SUPA- Learn from others	
	Support for feeling (SUPF)		



Table E.2 Reasoning on CDM: Participant 5

Coping strategy	Reasoning	Quotation	Number
CDM- Thinking about ways to solve the problem	Blaming	<p><i>One thing that bothers me: We received a lot of 'homework'. With that as such, I have no problem. However, the time in which to complete it, is unrealistic. I do not mind to work during week ends, BUT unfortunately I do not have access to internet at home. That leaves me with all the work to do for Monday (21st). To do good, efficient work - irrespective of the depth of the assignment - I am of the personal opinion that we should receive enough (ample)time to complete assignments. It does not help to cram different tasks or exercises into a day or two - it creates unnecessary pressure and does not allow for optimum performance. I now have to "quickly" do all these assignments on Monday morning - afternoon, and have my doubts about the quality. On the other hand, I also have to work in a team, meaning that the quality of my inputs will have and affect on my team members. I prefer best quality at all times, but then we must have time!</i></p>	#1
		<p><i>After being occupied with homework for the whole weekend, 17 and 18 July, I came to the following conclusion: The presentations of new programmes are way to fast. It feels as if everything is rushed over to give me the "knowledge" of the existence of the programmes. However, I hardly understand any of the "workings" of these programmes. I battled through some of the homework and felt that I actually waste a lot of valuable time. Wouldn't it be better to start with the development of the subject/courses and then use what is available, in collaboration, with the ID's? I just wonder... maybe it's just my age, but I cannot even remember what we have done without looking at the programme! To me it is a matter of too much, too quickly, too little time, too little relevance.</i></p> <p>Comment: Compare negative way of thinking with other participants</p>	#2
		<p><i>Today I realised that I haven't blogged for more than a month. Sorry guys - for those of you who need this info for research, etc.</i></p> <p><i>Why haven't I blogged: At some stage everything became too much! It was bloggers and surveys and homework and course development and battling to get to know how to operate new programs and deciding on a research project, writing a proposal, thinking about video production, etc., etc. Do you really blame us for not blogging?!</i></p> <p><i>However, I do want to keep being honest in these blogging comments! So, here goes:</i></p>	#3
		<p><i>The pressure to 'blog' and do assignments, read e-mails, etc. got to me this morning. It will be far easier when we have the necessary facilities at home to work in the evenings. We are busy all day and I do try to get something done early morning and late afternoons (in my office). But, it will be easier (and much more effective) if I can do the "homework" at home! I trust that this will be much better once the full-time workshops are finished!</i></p>	#4



Table E.2 Reasoning on CDM: Participant 5 (cont.)

Coping strategy	Reasoning	Quotation	Number
CDM- Thinking about ways to solve the problem	Made suggestion	<i>To do good, efficient work - irrespective of the depth of the assignment - I am of the personal opinion that we should receive enough (ample)time to complete assignments. It does not help to cram different tasks or exercises into a day or two - it creates unnecessary pressure and does not allow for optimum performance. I now have to "quickly" do all these assignments on Monday morning - afternoon, and have my doubts about the quality. On the other hand, I also have to work in a team, meaning that the quality of my inputs will have and affect on my team members. I prefer best quality at all times, but then we must have time!</i>	#5
		<i>Although we had a lot of fun and many laughs, I would suggest the following: Make sure that a very clear message gets across with regards to preparation. My understanding (misunderstanding) was that we had to bring the props, etc. for the next worksession DURING WHICH we will be taught how to prepare and what to do and not to do. If I would have known that we had to be totally prepared, it might have been a more efficient experience to me. Now I feel that it was such a disaster, I would never consider doing a video production</i>	#6
		<i>I enjoyed the hands-on session on Perception, but I doubt whether I would use that in stead of Respondus!</i>	#7
		<i>As I did not manage to prepare all the banners and stuff with Corel and Frontpage, I could not participate fully in the WebCT Designing session. Fortunetaly I got something from other files and could at least start doing something. This is the difficult part: If one does not understand the functioning and/or application of one thing, it is difficult to go on to the next. I don't appreciate being 'behind' - never was and never will be...! The hands-on session is the only way to learn to use everything. I don't think it is necessary for us to learn by trial-and-error. We don't have time to press all the wrong buttons before getting it right! Therefore I think all will appreciate a step-by-step layout of 'new' things to do and programmes to use.</i>	#8
	Made suggestion	<i>Thank you, ..., for handing out a step-by-step guide to upload files on WebCT. It saved me another day of time-consuming suffering to get this right! At least I think I will be able to complete this part of the homework now!</i> Thanks Comment: Coping strategies	#9

Table E.2 Reasoning on CDM: Participant 5 (cont.)

Coping strategy	Reasoning	Quotation	Number
CDM- Thinking about ways to solve the problem	Not used	<i>I enjoyed the hands-on session on Perception, but I doubt whether I would use that in stead of Respondus!</i>	#10
	Perception negative Made suggestion	<i>One thing that bothers me: We received a lot of 'homework'. With that as such, I have no problem. However, the time in which to complete it, is unrealistic. I do not mind to work during week ends, BUT unfortunately I do not have access to internet at home. That leaves me with all the work to do for Monday (21st). To do good, efficient work - irrespective of the depth of the assignment - I am of the personal opinion that we should receive enough (ample)time to complete assignments. It does not help to cram different tasks or exercises into a day or two - it creates unnecessary pressure and does not allow for optimum performance. I now have to "quickly" do all these assignments on Monday morning - afternoon, and have my doubts about the quality. On the other hand, I also have to work in a team, meaning that the quality of my inputs will have and affect on my team members. I prefer best quality at all times, but then we must have time!</i> Comment: Compare negative way of thinking with positive of other participants in same situation- EI?	#11
		<i>Wow! My hands were sweaty, my stomach had 'butterflies', my mouth was dry... All this for a 60 second video recording on anything!! I felt terrible before, during and after my video recording. As a matter of fact, I afterwards I felt completely incompetent and a total fool. Nothing I planned worked out! At least now I know how to prepare, for what to prepare, and what to do and not to do, if there will ever be another exercise like this.</i> <i>Although we had a lot of fun and many laughs, I would suggest the following: Make sure that a very clear message gets across with regards to preparation. My understanding (misunderstanding) was that we had to bring the props, etc. for the next worksession DURING WHICH we will be taught how to prepare and what to do and not to do. If I would have known that we had to be totally prepared, it might have been a more efficient experience to me. Now I feel that it was such a disaster, I would never consider doing a video production!</i>	#12
	Perception positive Made suggestion	<i>The way in which the activity re e-testing was introduced, was very creative (die suigstokkie-ding). From the discussions in the debate it was very clear that everybody is willing to use it, but also realises the limitations in certain circumstances. I am personally of the opinion that e-testing will be used - extensively - in 'normal' tests during the semester. However, I don't see that e-testing will feature in exams in the near future - due to all the 'negative' aspects mentioned during the debate.</i>	#13



Table E.2 Reasoning on CDM: Participant 5 (cont.)

Coping strategy	Reasoning	Quotation	Number
CDM- Thinking about ways to solve the problem	Made suggestion	<p><i>The pressure to 'blog' and do assignments, read e-mails, etc. got to me this morning. It will be far easier when we have the necessary facilities at home to work in the evenings. We are busy all day and I do try to get something done early morning and late afternoons (in my office). But, it will be easier (and much more effective) if I can do the "homework" at home! I trust that this will be much better once the full-time workshops are finished!</i></p>	#14
		<p><i>At first it was nerve-racking to think about presenting the "little" I have done so far. Eventually, it turned out to be not "that bad". I'm still worried about the little progress I have made up to now. After the blueprint I realized that there is a h... of a lot to do in very little time. I think I would prefer to actively start with the development of my subject, rather than to spend more precious time on homework. Not that the homework does not have a function! I just feel that the time I spend struggling to design a banner and graphics (because that is the homework) can be used much more productively in designing my subject!</i></p> <p><i>During the hands-on session in the internet lab, I again realised the value of these sessions. This is where we learn how to apply the tools - not with homework!</i></p> <p><i>Looking forward to really start with the contents of my subject.</i></p>	#15

Table E.3 Reasoning on DPS: Participant 5

Coping strategy	Reasoning	Quotation	Number
DPS- Attend workshops/training session	Perception negative	<p>Front Page</p> <p><i>The importance of FP only struck me when I had to upload material onto WebCT. I realised then that I needed the skill long ago. Afters explanation I understood why it was needed. Now it forms a crucial part of my preparations and development of material. Very empowering and satisfying</i></p> <p>.</p> <p><i>It is a pity that the importance was not emphasised from the beginning. The initial training session was disastrous. I perceived the presenter as impatient and did not dare to ask questions! I attended the additional lecture by.... and “n lig het toe opgegaan”!</i></p> <p><i>Good feeling to be able to use the programme in development work.</i></p> <p>Comment: Negative appraisal because presenter was perceived as negative- link with EI?</p>	#1
		<p>DPS- Practice</p> <p>User friendly</p> <p>Respondus: Empowering, save a lot of time - efficient. Listening skills and exercise Empowering.</p> <p>Camtasia: Listening skills and exercise.</p>	#2 #3
DPS- Use it	Enjoyable	<p>Yahoo: Most frequently used of all technology tools!!! I enjoy Yahoo because it is a form of ‘contact’ with the Partners and ID’s. Quick and easy way to ask a question and get an immediate answer or just to find out how someone else is doing.</p>	#4
		<p>Yahoo: Use it! Enjoyable and usable, effective.</p>	#5
	Perception negative	<p><i>The blogger was o.k. in the beginning. Was good to share some feelings. However, later on when the work became overwhelming, the blogger became a schlep.</i></p>	#6
	Perception positive	<p><i>From the discussions in the debate it was very clear that everybody is willing to use it, but also realises the limitations in certain circumstances. I am personally of the opinion that e-testing will be used - extensively - in ‘normal’ tests during the semester.</i></p>	#7

Table E.5 Reasoning on POS: Participant 5

Coping strategy	Reasoning	Quotation	Number
POS- Will use it in future	Enjoyable	<i>Today was very educational. I enjoyed the Yahoo-session especially. We got a chance to really "link" with each other. Great fun and I think it can also be very useful.</i>	#1
	Perception positive	<i>Front Page was also very interesting and can also be useful.</i>	#2
		<i>I was aware of a book available in, but it was impressive to see how many different aspects are covered online. This will make my life a lot easier in developing the course for !! Good exercise. I will get a lot more when I am actually starting to work.</i>	#3
		<i>After has explained the generic development of a blueprint document structure, I experimented with the concept in flow diagrammes, keeping my own subject in mind. It did make sense to start planning everything on paper. By looking at these very rough blocks and arrows on paper, I could see something is actually happening in my mind.</i>	#4
		<i>The graphics was a little quick, but at least I know about the existence of many great things to use without a lot of difficulty.</i>	#5

Table E.6 Reasoning on CON: Participant 5

Coping strategy	Reasoning	Quotation	Number
CON- Know how to	Perception positive	<u>Video</u> <i>Previously employed in classes. Good feeling to be able to give feedback to students.</i>	#1



Table E.7 Reasoning on AVA: Participant 5

Coping strategy	Reasoning	Quotation	Number
AVA- Did not try to implement	Not used	<p>Video conferencing: <i>Presenter not too positive or clear with regards to usability - therefore not considered as an option to use. No mastering necessary. Seems to me that other persons have to do the work - I just need to be there....?</i></p>	#1
		<p><i>Still not clear where it will fit in. Did not really try to implement. Previous attempt (prior to P@W) failed. Not interested.</i></p>	
		<p><i>Corel Draw Not used. Cannot remember when it was done!!</i></p>	#2
AVA- Will investigate later	Not used	<p><i>Camtasia seems to be very easy to use. Will try it out later... if needed...</i></p>	#3
AVA- Blaming other things	Perception negative	<p><i>After being occupied with homework for the whole weekend, 17 and 18 July, I came to the following conclusion: The presentations of new programmes are way to fast. It feels as if everything is rushed over to give me the "knowledge" of the existence of the programmes. However, I hardly understand any of the "workings" of these programmes. I battled through some of the homework and felt that I actually waste a lot of valuable time. Wouldn't it be better to start with the development of the subject/courses and then use what is available, in collaboration, with the ID's? I just wonder... maybe it's just my age, but I cannot even remember what we have done without looking at the programme! To me it is a matter of too much, too quickly, too little time, too little relevance.</i></p> <p>Comment: Compare negative way of thinking with other participants</p>	#4
		<p><i>As I did not manage to prepare all the banners and stuff with Corel and Frontpage, I could not participate fully in the WebCT Designing session. Fortunetaly I got something from other files and could at least start doing something. This is the difficult part: If one does not understand the functioning and/or application of one thing, it is difficult to go on to the next. I don't appreciate being 'behind' - never was and never will be...! The hands-on session is the only way to learn to use everything. I don't think it is necessary for us to learn by trial-and-error. We don't have time to press all the wrong buttons before getting it right! Therefore I think all will appreciate a step-by-step layout of 'new' things to do and programmes to use.</i></p>	#5
		<p><i>Why haven't I blogged: At some stage everything became too much! It was bloggers and surveys and homework and course development and battling to get to know how to operate new programs and deciding on a research project, writing a proposal, thinking about video production, etc., etc. Do you really blame us for not blogging?!</i></p>	#6

Table E.8 Reasoning on SUPA: Participant 5

Coping strategy	Reasoning	Quotation	Number
SUPA-Ask for help	User friendly	... gave an informative presentation on the do's and don'ts of video conferencing . Fortunately she is there when it will be my turn to use video conferencing!	#1
SUPA-Get help from ID	Perception negative Perception positive	Front Page The importance of FP only struck me when I had to upload material onto WebCT. I realised then that I needed the skill long ago. After Gerrit's explanation I understood why it was needed. Now it forms a crucial part of my preparations and development of material. Very empowering and satisfying. It is a pity that the importance was not emphasised from the beginning. The initial training session was disastrous. I perceived the presenter as impatient and did not dare to ask questions! I attended the additional lecture by Gerrit and "n lig het toe opgegaan! Good feeling to be able to use the programme in development work. Comment: Negative appraisal because presenter was perceived as negative- link with EI?	#2
	Enjoyable	WebCT Empowering, boost in self-confidence, efficient Conscientiousness, motivated and inspired by ... (ID), hel from ... (ID). Excellent explanation of how to use by ID. Ek voel gemaklik met die nuwe vaardigheid, maar weet ook dat ek op die 'back-up' van my IO kan steun sou ek probleme ervaar. Comment: Positive appraisal	#3
	User friendly	... presented the section on electronic portfolios and Word & WebCT efficiently, as always, and even I could understand!	#4
		... explanation of the DAISY-model was very informative and useful. I will not forget the daisy and its rotating parts. I found the needs assessment section very necessary: this is what we should know prior to starting with designs?!	#5
SUPA-Learn from others	Perception positive	Camtasia Although not used in programme, the exposure was good. Good feeling to know how a former unknown tool is functioning and can be used. Listening skills and exercise. Good explanation given by instructor. Empowering.	#6
	User friendly	Respondus Empowering, save a lot of time - efficient. Listening skills and exercise Empowering.	#7



Table E.8 Reasoning on SUPA: Participant 5 (cont.)

Coping strategy	Reasoning	Quotation	Number
SUPA-Learn from others	Perception positive	<i>Show and Tell: A good way of getting ideas of what can be done and what will work for one's own programme.</i>	#8
		<i>The Show & Tells are always very interesting. Each partner has his/her own individual approach and this makes the program unique. I don't think that it will ever be possible to "standardise" courses or subjects because each one has its own requirements and possibilities. One can use ideas from other courses, but eventually will have a own unique program.</i>	#9
		<i>I am looking forward to each Tuesday - not only to see and hear about the work that has been done and new work to come, but also to feel 'at home', with people who are good to be with, who share - in many ways - and who are also fun to be with while learning from them. I feel like being part of a huge, friendly family! Thank you all!</i>	#10
		<i>The Show & Tells are always very lekker to listen to. Great to be able to share and learn from each other.</i>	#11

Table E.9 Range of perceived abilities: Participant 5

Able to use it	Need to master part of it	Empowering	Clueless	Did not use it
✓		✓		

Table E.10 Reasoning perceived ability: Participant 5

Reasoning	Quotation	Number
Able to use it	<p>Video Previously employed in classes. Good feeling to be able to give feedback to students.</p>	#1
	<p>Front Page The importance of FP only struck me when I had to upload material onto WebCT. I realised then that I needed the skill long ago. After ...'s explanation I understood why it was needed. Now it forms a crucial part of my preparations and development of material. Very empowering and satisfying. It is a pity that the importance was not emphasised from the beginning. The initial training session was disastrous. I perceived the presenter as impatient and did not dare to ask questions! I attended the additional lecture by ... and "n lig het toe opgegaan! Good feeling to be able to use the programme in development work. <i>Comment:</i> Negative appraisal because presenter was perceived as negative- link with EI?</p>	#2
	<p>Camtasia seems to be very easy to use. Will try it out later... if needed...</p>	#3
Didn't use it	<p>Perception Nie gebruik, nie nodig vir my kursus</p>	#4
	<p>Corel Draw Not used. Cannot remember when it was done!!</p>	#5
Empowering	<p>Respondus Empowering, save a lot of time - efficient</p>	#6
	<p>WebCT Empowering, boost in self-confidence, efficient Conscientiousness, motivated and inspired by ... (ID), hel from ... (ID). Excellent explanation of how to use by ID. Ek voel gemaklik met die nuwe vaardigheid, maar weet ook dat ek op die 'back-up' van my IO kan steun sou ek probleme ervaar. <i>Comment:</i> Positive appraisal</p>	#7

Appendix F

Outcomes of the analysis process: Participant 6

Table F.1	Coping strategies: Participant 6
Table F.2	Reasoning on CDM: Participant 6
Table F.3	Reasoning on DPS: Participant 6
Table F.4	Reasoning on POS: Participant 6
Table F.5	Reasoning on OPT: Participant 6
Table F.6	Reasoning on SUPA: Participant 6
Table F.7	Reasoning perceived ability: Participant 6
Table F.8	Range of perceived abilities: Participant 6



Table F.1 Coping strategies: Participant 6

Possible strategies		Strategies used	
Active coping strategies	Problem focused coping	Cognitive decision making (CDM)	CDM- Thinking about ways to solve the problem
		Direct problem solving (DPS)	DPS- Attend workshops/training session DPS- Experiment at home DPS- Search for a manual DPS- Struggle at home DPS- Trial and error DPS- Use it
		Seeking understanding (SU)	
	Positive cognitive restructuring	Positivity (POS)	POS- Will use it in future POS- Mention the positive
		Control (CON)	
		Optimism (OPT)	OPT-Will be able to use it OPT-Things will work out OPT-Self-motivation
		Use humour	
	Distraction strategies	Distracting actions (DA)	
Physical release of Emotions (PRE)			
Avoidance strategies	Avoidant actions (AVA)		
	Repression (REP)		
	Wishful thinking (WISH)		
Support seeking strategies	Support for actions (SUPA)	SUPA- Ask for people's opinions SUPA- Get help from ID SUPA- Discuss it with others SUPA-Learn from others	
	Support for feeling (SUPF)		



Table F.2 Reasoning on CDM: Participant 6

Coping strategy	Reasoning	Quotation	Number
CDM- Thinking about ways to solve the problem	Blaming Suggestion	<p><i>I appreciated ... session to find out how we experienced the e-moderating, and some concerns were expressed. I think we are just under a lot of pressure now. A suggestion: maybe next year's group should have two days a week for the first few weeks and then, when they have the new technologies mastered, only once a week. We had a rather slow start and now we are speeding out of control!</i></p> <p>Comment: Note positive way of handling negative emotions</p>	#1
	Enjoyable Perception positive	<p><i>Hi there!</i></p> <p><i>Today was great! I found it very interesting and a huge challenge. It started off with a great icebreaker from Hermien - very creative!</i></p> <p><i>It got us all in the right mood for the day. The ADDIE model was a very professional presentation, something we longed for! I think we are now used to a very high standard and see anything not up to standard as being boring and conventional.</i></p> <p><i>I enjoyed the group activities and sharing our thoughts about the needs analysis. We have a lot of homework, but I am excited about it as it will be fun doing the activities while learning at the same time.</i></p> <p>Comment: Compare positivity with negativity of some other partners- EI linkage? Turning to positive feelings</p>	#2
		<p><i>Today was just great fun!</i></p> <p><i>Our presentation of the ADDIE - model was reasonable. I still feel very nervous presenting in front of an audience - it is really much easier to lecture to students! It was a nice exercise to work in groups as we all contributed without physically meeting to do so.</i></p> <p><i>The highlight of the day was the video production. You can be very calm and collected but the moment you sit in front of a camera you are not yourself. I felt my mouth twitching on one side while I was talking. It was a good exercise as it looks easy to do but really isn't.</i></p> <p><i>I think this programme is very well organised. We receive programmes for every day and know exactly what homework to do and when the deadlines is.</i></p>	#3
		<p><i>The debate on e-testing was fun to do and I learned a lot about the advantages and disadvantages. It is good to know what hiccups can occur.</i></p>	#4
		<p><i>I love these hands-on sessions!</i></p>	#5



Table F.2 Reasoning on CDM: Participant 6 (cont.)

Coping strategy	Reasoning	Quotation	Number
CDM- Thinking about ways to solve the problem	Made suggestion Enjoyable Perception Positive	<i>The graphics was also great but I would have liked more time to actually create something by using graphics from the different sites.</i>	#6
		<i>The WebCT re-cap was necessary as I realised that I forgot many important things! I still feel that most of the time I am behind and I am now sure that I am a very slow learner. Some people just get the whole idea with half a word! I am not one of those and will just have to work harder. Even though the course interface is very simple at this time, it is great to know that I did it. I would like some more sessions on graphics and scanning just to be more sure of myself.</i> Comment: Note positive way of dealing with negative feelings	#7
		Front page: <i>I enjoyed this program but would have liked more training and time to work with this program before developing my online course as I made several mistakes which I felt could have been prevented by more training. I liked the templates and creative features and had to learn very quickly but find it very useful and would like to use it extensively in future</i>	#8
		<i>Front Page was also very interesting and I felt excited by everything I could do by the end of the afternoon. I was exhausted though!</i> <i>I enjoy the training very much but would like more time to actually work on it and create webpages and other graphics.</i> <i>Overall it was a great two days!</i>	#9
	Perception Positive Made suggestion	<i>I appreciated ...'s session to find out how we experienced the e-moderating, and some concerns were expressed. I think we are just under a lot of pressure now. A suggestion: maybe next year's group should have two days a week for the first few weeks and then, when they have the new technologies mastered, only once a week. We had a rather slow start and now we are speeding out of control!</i> <i>I find Gilly Salmon a very warm and friendly person. She had answers for all our questions which shows she is really an expert in her field.</i> <i>Bye bye</i> Comment: Note positive way of handling negative emotions	#10
		<i>The presentation on digital videos was very interesting, accept that I really felt like a fool as result of my limited knowledge on Gigs, bytes, codecs etc.etc. I would appreciate if we could receive a list of terms and their explanation before the presentation - for those slow learners like me.</i> <i>I look forward to playing tonight!</i>	#11

Table F.2 Reasoning on CDM: Participant 6 (cont.)

Coping strategy	Reasoning	Quotation	Number
CDM- Thinking about ways to solve the problem	Perception positive	<p><i>Respondus was the first experience I had with e-testing software and I was excited about the possibilities it provided. At first I thought it was the most wonderful thing, but when we were introduced to Perception, my enthusiasm with regard to Respondus declined a little. It is still as user friendly program but lacks some of the features I found in Perception</i></p> <p>Comment: Negative emotions turned positive- look for links with EI</p>	#12
		<p><i>I felt anxious today as all my homework was not completed. Not for a lack of trying though! I have not completed questions 6-13 on the e-testing quizz.</i></p> <p><i>I am still waiting to speak to my HOD as she needs to tell me whether we will be using the course content of DTT (a company that usually provides us with the manuals and accredits the lecturers). Then I can really go ahead with the module blueprint.</i></p>	#13

Table F.3 Reasoning on DPS: Participant 6

Coping strategy	Reasoning	Quotation	Number
DPS- Attend workshops/training session	Perception positive	<i>I received an e-mail after work confirming a powerpoint course that starts tomorrow (I enquired about when the course starts a few weeks ago and never go response - so I really must go tomorrow)</i>	#1
DPS- Experiment at home	Enjoyable	<p>Camtasia: <i>I was really excited about this program and enjoyed the worksession. If I was a student I would have enjoyed the incorporation of camtasia in an online course. At home I experimented with it, recorded, re-recorded 7 times or more until I found a method that works for me. This method really impressed my colleques at work and is really very useful and fun to use. I think of all the programs, this would be number 2 on my list (yahoo messenger being first!)</i></p>	#2
		<p>Perception: <i>This program is more user friendly and has interesting features such as different looks and various question options. As we did not have enough time in the worksessions to really master the program I experimented with it at home and found it very useful and not difficult to master.</i></p>	#3

Table F.3 Reasoning on DPS: Participant 6 (cont.)

Coping strategy	Reasoning	Quotation	Number
DPS- Search for a manual	Made suggestion	Corel draw: <i>I was overwhelmed when first experiencing the features of corel draw. I did not feel we had enough training and was very unsure when I had to use this on my one. Once again I searched for a manual to explain the different features and had many trials before mastering some of the features. I feel there is a lot I still need to learn which can make life much easier and my courses more interesting</i>	#4
		WebCT: <i>I was at first overwhelmed with the different options and requirements of WebCT. It was just too much to take in during the worksessions and I immediately started searching for a manual to refer to</i>	#5
DPS- Struggle at home	Perception negative Perception positive	<i>WebCT: I struggled at home when I wanted to apply what we learned in the worksessions as I could just not remember all the functions. I did not cope at all during the first few sessions and became very discouraged.</i> Turn negative into positive	#6
	Blaming	<i>I tried last week to blogg but had problems. I wrote twice, but both times it would not publish and I lost everything. I hope this time it will work.</i>	#7
DPS- Struggle at home	Unsure	<i>I searched and searched..... I did not really find much digital content on my subject matter. I copied the URL's that might provide some information. One of the websites requested a user name and password, so of course I was not registered to use it. I am still unsure of where to look on the publishers websites for digital content.</i> <i>I have included some other references in the spreadsheet. I am feeling a little discouraged at this stage!</i>	#8
	Perception positive	<i>Aww man! I just wiped out my blogg! I'll try again. I wanted to insert a picture and erased everything.</i>	#9

Table F.3 Reasoning on DPS: Participant 6 (cont.)

Coping strategy	Reasoning	Quotation	Number
DPS- Trial and error	Enjoyable Made suggestion	Front page: I enjoyed this program but would have liked more training and time to work with this program before developing my online course as I made several mistakes which I felt could have been prevented by more training. I liked the templates and creative features and had to learn very quickly but find it very useful and would like to use it extensively in future	#10
	Made suggestion	Corel draw: I was overwhelmed when first experiencing the features of corel draw. I did not feel we had enough training and was very unsure when I had to use this on my one. Once again I searched for a manual to explain the different features and had many trials before mastering some of the features. I feel there is a lot I still need to learn which can make life much easier and my courses more interesting	#11
		WebCT: Through trial and error I became more comfortable with the program and am now more motivated about the usage of the program	#12
DPS- Use it	Enjoyable	Blogger: I had no idea that something like this even existed and had to be very disciplined to keep it updated. This was the first thing I did after getting home from our worksessions as the information was still fresh in my mind. It was nice to be able to record some of the joys as well as the frustrations and sometimes the words just poured out of me. Other times I was more reserved with not that much to say.	#13
		Yahoo messenger: This was my absolute best and I found it very valuable! It was just great to learn about this feature I didn't know about and be in contact with my friends@work. This must be the technology I mastered the quickest and best! I also found it valuable to exchange information quickly with the partners.	#14
	Made suggestion Enjoyable	Front Page was also very interesting and I felt excited by everything I could do by the end of the afternoon. I was exhausted though! I enjoy the training very much but would like more time to actually work on it and create webpages and other graphics. Overall it was a great two days!	#15
	Perception positive	I was very tired today as I had only 3 1/2 hours sleep. I managed to set a test in Respondus from 3h30 - 5h30 so it was not all bad.	#16



Table F.4 Reasoning on POS: Participant 6

Coping strategy	Reasoning	Quotation	Number
POS- Will use it in future	Enjoyable	Video: <i>This was also really exciting. At first I was apprehensive to learn about all the terminology as I did not understand the technical mumbo jumbo, but was relieved to hear that I did not have to know about it and that other people would take care of all of that! It was a challenge to write the script for the video and I had to ask several people's opinions as I was very unsure of myself but received valuable feedback which helped me to improve the script. I felt proud to have my script accepted and would like to use it in future</i> Comment: Turning negative emotions and feelings into positive emotions and feelings- is there a link with EI? Other participants doing the same?	#1
		<i>I really enjoyed the hot potatoes as I saw this in another online course and wondered how it was done. I am definitely going to use it. Wimba was also nice but I get frustrated with the slow computers - we are very blessed with our ADSL lines!</i>	#2
		<i>I liked Camtasia and would definitely include it in my course.</i>	#3
		<i>The VTC demo was also fun and I can't wait to have the time to do some computer training on it.</i>	#4
	User friendly	<i>It was great working with respondus and I think it is much easier than setting tests in Webct. Unfortunately I don't have any tests to import into Respondus as the assessment is done by an outside company so I will have to compile lots and lots of questions.</i>	#5
	Perception positive User friendly Made suggestion	Front page: <i>I enjoyed this program but would have liked more training and time to work with this program before developing my online course as I made several mistakes which I felt could have been prevented by more training. I liked the templates and creative features and had to learn very quickly but find it very useful and would like to use it extensively in future</i>	#6
POS- Mention the positive	Enjoyable	<i>I enjoyed the group activities and sharing our thoughts about the needs analysis. We have a lot of homework, but I am excited about it as it will be fun doing the activities while learning at the same time.</i> Comment: Compare positivity with negativity of some other partners- EI linkage? Turning to positive feelings	#7

Table F.4 Reasoning on POS: Participant 6 (cont.)

Coping strategy	Reasoning	Quotation	Number
POS-Mention the positive	Perception positive	<p><i>Hi there!</i></p> <p><i>Today was great! I found it very interesting and a huge challenge. It started off with a great icebreaker from - very creative!</i></p> <p><i>It got us all in the right mood for the day. The ADDIE model was a very professional presentation, something we longed for! I think we are now used to a very high standard and see anything not up to standard as being boring and conventional.</i></p>	#8
		<p><i>Today was just great fun!</i></p> <p><i>Our presentation of the ADDIE - model was reasonable. I still feel very nervous presenting in front of an audience - it is really much easier to lecture to students! It was a nice exercise to work in groups as we all contributed without physically meeting to do so.</i></p> <p><i>The highlight of the day was the video production. You can be very calm and collected but the moment you sit in front of a camera you are not yourself. I felt my mouth twitching on one side while I was talking. It was a good exercise as it looks easy to do but really isn't.</i></p> <p><i>I think this programme is very well organised. We receive programmes for every day and know exactly what homework to do and when the deadlines is.</i></p>	#9
		<p><i>I really enjoyed the hot potatoes as I saw this in another online course and wondered how it was done. I am definitely going to use it. Wimba was also nice but I get frustrated with the slow computers - we are very blessed with our ADSL lines!</i></p>	#10



Table F.5 Reasoning on Optimism: Participant 6

Coping strategy	Reasoning	Quotation	Number
OPT-Self-motivation	Perception positive	<i>After today I am really nervous! I started to doubt whether I will be able to complete the course online in just 6 months. I guess Prof Trollip was just being realistic and I am too much of a dreamer. I will just have to do my best.</i>	#1
		<i>Well, then I will just have to impress myself!</i>	#2
OPT-things will work out	Perception positive	<i>I am really getting scared that I won't be able to finish the online course before the end of the year. I have to work much harder, get another 8 modules done, plan a video, write a proposal etc etc. I have never had a sleep disorder, but struggle these days. But, I still love every moment! I am proud of my work after a day behind the computer.</i>	#3
OPT-Will be able to use it	Perception positive	<i>I feel OK with the electronic testing, but still need help with the longer questions and did not include a long question in the quiz the other partners should complete. I feel a little more confident after today and look forward to start working on my modules.</i>	#4

Table F.6 Reasoning on SUPA: Participant 6

Coping strategy	Reasoning	Quotation	Number
SUPA-Ask for people's opinions	Enjoyable	Video: <i>This was also really exciting. At first I was apprehensive to learn about all the terminology as I did not understand the technical mumbo jumbo, but was relieved to hear that I did not have to know about it and that other people would take care of all of that! It was a challenge to write the script for the video and I had to ask several people's opinions as I was very unsure of myself but received valuable feedback which helped me to improve the script. I felt proud to have my script accepted and would like to use it in future</i> Comment: <i>Turning negative emotions and feelings into positive emotions and feelings- is there a link with EI? Other participants doing the same?</i>	#1
SUPA-Get help from ID	Made suggestion	<i>I realised this week that I have to see my instructional designer at least once a week as their is a lot I need help with!</i>	#2
	Perception positive	<i>I feel OK with the electronic testing, but still need help with the longer questions and did not include a long question in the quiz the other partners should complete. I feel a little more confident after today and look forward to start working on my modules.</i>	#3
SUPA-Discuss it with others	Perception positive	<i>I enjoyed the group activities and sharing our thoughts about the needs analysis. We have a lot of homework, but I am excited about it as it will be fun doing the activities while learning at the same time.</i>	#4



Table F.6 Reasoning on SUPA: Participant 6 (cont.)

Coping strategy	Reasoning	Quotation	Number
SUPA- Discuss it with others	Perception positive	<p><i>Yahoo messenger</i></p> <p><i>This was my absolute best and I found it very valuable! It was just great to learn about this feature I didn't know about and be in contact with my friends@work. This must be the technology I mastered the quickest and best! I also found it valuable to exchange information quickly with the partners</i></p>	#5
		<p><i>Although we are all doing the same thing - we all do it in different styles - putting emphasis on different aspects of the online course. I did get a lot of ideas from the other partners and hope they get some from me!</i></p>	#6
		<p><i>The day was busy and I am exhausted. I enjoy the show and tell and really enjoy this group of people. I am going to miss them after this year and feel that we are establishing good friendships during these sessions. We talk to each other with Yahoo messenger and laugh and struggle together. It was nice to see that ... was more positive today and that everyone is prepared to help each other.</i></p> <p><i>The show and tell was interesting and I learnt a lot from the group that presented. We are all individuals and all have our one pace of doing things.</i></p>	#7
		<p><i>The partners are doing great with their course content. Everyone does it differently and I get tips from each and everyone that presents. We didn't get to the research proposals but I still need assistance in that regard.</i></p>	#8

Table F.7 Reasoning perceived ability: Participant 6

Reasoning	Quotation	Number
Able to use it	<p>Perception</p> <p><i>This program is more user friendly and has interesting features such as different looks and various question options. As we did not have enough time in the worksessions to really master the program I experimented with it at home and found it very useful and not difficult to master.</i></p>	#1
	<p>Video</p> <p><i>This was also really exciting. At first I was apprehensive to learn about all the terminology as I did not understand the technical mumbo jumbo, but was relieved to hear that I did not have to know about it and that other people would take care of all of that! It was a challenge to write the script for the video and I had to ask several people's opinions as I was very unsure of myself but received valuable feedback which helped me to improve the script. I felt proud to have my script accepted and would like to use it in future</i></p> <p>Comment:</p> <p><i>Turning negative emotions and feelings into positive emotions and feelings- is there a link with EI? Other participants doing the same?</i></p>	#2
	<p>Front page</p> <p><i>I enjoyed this program but would have liked more training and time to work with this program before developing my online course as I made several mistakes which I felt could have been prevented by more training. I liked the templates and creative features and had to learn very quickly but find it very useful and would like to use it extensively in future</i></p>	#3
	<p>Yahoo messenger</p> <p><i>This was my absolute best and I found it very valuable! It was just great to learn about this feature I didn't know about and be in contact with my friends@work. This must be the technology I mastered the quickest and best! I also found it valuable to exchange information quickly with the partners.</i></p>	#4
Need to master part of it	<p>WebCT</p> <p><i>I was at first overwhelmed with the different options and requirements of WebCT. It was just too much to take in during the worksessions and I immediately started searching for a manual to refer to. I struggled at home when I wanted to apply what we learned in the worksessions as I could just not remember all the functions. I did not cope at all during the first few sessions and became very discouraged. Through trial and error I became more comfortable with the program and am now more motivated about the usage of the program</i></p>	#5

Table F.7 Reasoning perceived ability: Participant 6 (cont.)

Reasoning	Quotation	Number
Need to master part of it	<p>WebCT</p> <p><i>I feel OK with the electronic testing, but still need help with the longer questions and did not include a long question in the quiz the other partners should complete. I feel a little more confident after today and look forward to start working on my modules.</i></p>	#6
	<p>CorelDraw</p> <p><i>I was overwhelmed when first experiencing the features of corel draw. I did not feel we had enough training and was very unsure when I had to use this on my one. Once again I searched for a manual to explain the different features and had many trials before mastering some of the features. I feel there is a lot I still need to learn which can make life much easier and my courses more interesting</i></p>	#7
	<p>Front page</p> <p><i>I enjoyed this program but would have liked more training and time to work with this program before developing my online course as I made several mistakes which I felt could have been prevented by more training. I liked the templates and creative features and had to learn very quickly but find it very useful and would like to use it extensively in future</i></p>	#8
Empowering	<p><i>Respondus was the first experience I had with e-testing software and I was excited about the possibilities it provided. At first I thought it was the most wonderful thing, but when we were introduced to Perception, my enthusiasm with regard to Respondus declined a little. It is still as user friendly program but lacks some of the features I found in Perception</i></p> <p><i>Comment:</i> <i>Negative emotions turned positive- look for links with EI</i></p>	#9
	<p>Perception</p> <p><i>This program is more user friendly and has interesting features such as different looks and various question options. As we did not have enough time in the worksessions to really master the program I experimented with it at home and found it very useful and not difficult to master.</i></p>	#10
	<p>Camtasia</p> <p><i>I was really excited about this program and enjoyed the worksession. If I was a student I would have enjoyed the incorporation of Camtasia in an online course. At home I experimented with it, recorded, re-recorded 7 times or more until I found a method that works for me. This method really impressed my colleagues at work and is really very useful and fun to use. I think of all the programs, this would be number 2 on my list (yahoo messenger being first!)</i></p>	#11

Table F.7 Reasoning perceived ability: Participant 6 (cont.)

Reasoning	Quotation	Number
Empowering	<p>Video</p> <p><i>This was also really exciting. At first I was apprehensive to learn about all the terminology as I did not understand the technical mumbo jumbo, but was relieved to hear that I did not have to know about it and that other people would take care of all of that! It was a challenge to write the script for the video and I had to ask several people's opinions as I was very unsure of myself but received valuable feedback which helped me to improve the script. I felt proud to have my script accepted and would like to use it in future</i></p> <p><i>Comment: Turning negative emotions and feelings into positive emotions and feelings- is there a link with EI? Other participants doing the same?</i></p>	#12
	<p>Front page</p> <p><i>I enjoyed this program but would have liked more training and time to work with this program before developing my online course as I made several mistakes which I felt could have been prevented by more training. I liked the templates and creative features and had to learn very quickly but find it very useful and would like to use it extensively in future</i></p>	#13
	<p>Blogger</p> <p><i>I had no idea that something like this even existed and had to be very disciplined to keep it updated. This was the first thing I did after getting home from our worksessions as the information was still fresh in my mind. It was nice to be able to record some of the joys as well as the frustrations and sometimes the words just poured out of me. Other times I was more reserved with not that much to say.</i></p>	#14
	<p>Yahoo messenger</p> <p><i>This was my absolute best and I found it very valuable! It was just great to learn about this feature I didn't know about and be in contact with my friends@work. This must be the technology I mastered the quickest and best! I also found it valuable to exchange information quickly with the partners.</i></p>	#15
Didn't use it	<p>Video conferencing</p> <p><i>I don't feel as if I mastered this technology as I have not personally used it yet. I look forward to experience it but am not sure whether I will use it in future.</i></p>	#16

Table F.8 Range of perceived abilities: Participant 6

Able to use it	Need to master part of it	Empowering	Clueless	Did not use it
✓	✓	✓		✓

Appendix G

Outcomes of the analysis process: Participant 7

Table G.1	Coping strategies: Participant 7
Table G.2	Reasoning on CDM: Participant 7
Table G.3	Reasoning on DPS: Participant 7
Table G.4	Reasoning on AVA: Participant 7
Table G.5	Reasoning perceived ability: Participant 7
Table G.6	Range of perceived abilities: Participant 7



Table G.1 Coping strategies: Participant 7

Possible strategies		Strategies used	
Active coping strategies	Problem focused coping	Cognitive decision making (CDM)	CDM- Thinking about ways to solve the problem
		Direct problem solving (DPS)	DPS- Made notes DPS- Use it
		Seeking understanding (SU)	
	Positive cognitive restructuring	Positivity (POS)	
		Control (CON)	
		Optimism (OPT)	
		Use humour	
Distraction strategies	Distracting actions (DA)		
	Physical release of Emotions (PRE)		
Avoidance strategies	Avoidant actions (AVA)	AVA- Blaming other things AVA- Didn't use it AVA- Use it to a limited extend	
	Repression (REP)		
	Wishful thinking (WISH)		
Support seeking strategies	Support for actions (SUPA)		
	Support for feeling (SUPF)		

Table G.2 Reasoning on CDM: Participant 7

Coping strategy	Reasoning	Quotation	Number
CDM- Thinking about ways to solve the problem	Blaming Perception negative	Yahoo Messenger: <i>Very useful to communicate but I don't like it, for the same reason I do not like e-mail. It wastes a lot of my time, which I don't have a lot of. Workload problems.</i>	#1
	Not used	Corel Draw: <i>Know how to use it but did not delve deeper. Limited use in my subject.</i>	#2
		Video conferencing: <i>I have too many students and too little time to still do video conferencing. My students are S1 mainly and they are still learning the basics. The S3, S4 students can benefit from it especially by showing an application on site.</i>	#3
	Perception positive	<i>I made careful notes on the operating instructions, then when I got home, I tried to do it again using the instructions, which I then modified to be more precise.</i>	#4

Table G.3 Reasoning on DPS: Participant 7

Coping strategy	Reasoning	Quotation	Number
DPS- Made notes	Blaming	<i>I made careful notes on the operating instructions, then when I got home, I tried to do it again using the instructions, which I then modified to be more precise. There are a couple of Technologies like Camtasia, Perception and Blogger that did not want to work as described by the instructors. They frustrated me.</i>	#1
DPS- Use it	Blaming Empowering	WebCT: <i>80% mastered through use. Was very frustrated in the beginning because nothing wanted to work as I wanted it to. I still feel 10% frustrated because there are things that do not upload as I want it. It feels good to see what the students will see.</i>	#2
	Made suggestion	Front Page: <i>I worked quite a bit on FrontPage and downloaded to WebCT but it could not give me structure of the course as I wanted it. Later on, on WebCT I found out that in any case I had to go back the FrontPage structure, but did not have the time to redo everything.</i>	#3
	User friendly Empowering	Respondus: <i>Great, this was the answer to my dreams. The program did exactly what I wanted. Easy to operate and upload to WebCT.</i>	#4
	Empowering	Video: <i>Still waiting to do it. The writing of it was a mouthful, but what a in detail experience.</i>	#5

Table G.4 Reasoning on AVA: Participant 7

Coping strategy	Reasoning	Quotation	Number
AVA- Blaming other things	Blaming Not used Perception negative	<i>80% mastered through use. Was very frustrated in the beginning because nothing wanted to work as I wanted it to. I still feel 10% frustrated because there are things that do not upload as I want it. It feels good to see what the students will see.</i>	#1
		Yahoo Messenger: <i>Very useful to communicate but I don't like it, for the same reason I do not like e-mail. It wastes a lot of my time, which I don't have a lot of. Workload problems.</i>	#2
		Video conferencing: <i>I have too many students and too little time to still do video conferencing. My students are S1 mainly and they are still learning the basics. The S3, S4 students can benefit from it especially by showing an application on site.</i>	#3
	Blaming	<i>I still feel 10% frustrated because there are things that do not upload as I want it.</i>	#4
		Camtasia: <i>I must of had a bad day. I could not see the use in Surveying.</i>	#5
AVA- Didn't use it	Blaming	<i>There are a couple of Technologies like Camtasia, Perception and Blogger that did not want to work as described by the instructors. They frustrated me.</i>	#6
	Not used	Perception: <i>Tried it on the same day we learnt it but could not see that I could do what I want with it.</i>	#7
		Camtasia: <i>I must of had a bad day. I could not see the use in Surveying. I felt it was too complicated and could not see that it could do all that I wished.</i> Comment: Negative appraisal of technology, although Camtasia could be very useful	#8
AVA- Use it to a limited extend	Blaming	Blogger: <i>I was... and could not remember the password even though I wrote it down, I kept on loosing it and forgetting. I did however write my Blogs down on the program page which was handed out each week.</i> <i>I was <u>very</u> (underlined heavily) frustrated by not being able to get into Blogger.</i> Comment: Very negative- EI?	#9

Table G.5 Reasoning perceived ability: Participant 7

Reasoning	Quotation	Number
Able to use it	<i>Front Page</i> worked quite a bit on FrontPage and downloaded to WebCT but it could not give me structure of the course as I wanted it. Later on, on WebCT I found out that in any case I had to go back the FrontPage structure, but did not have the time to redo everything.	#1
	Corel Draw: Know how to use it but did not delve deeper. Limited use in my subject.	#2
	Video: Still waiting to do it. The writing of it was a mouthful, but what a in detail experience.	#3
	Respondus: Great, this was the answer to my dreams. The program did exactly what I wanted. Easy to operate and upload to WebCT.	#4
Need to master part of it	WebCT 80% mastered through use. Was very frustrated in the beginning because nothing wanted to work as I wanted it to. I still feel 10% frustrated because there are things that do not upload as I want it. It feels good to see what the students will see.	#5
	Difficult, because I was used to using the computer as a typewriter. Many times I felt that a person who had some experience in the Technologies would have been a better option for the course. I felt intimidated and actually started feeling a lot of low esteem about myself, because the other partners seem to know a hell of a lot more than I.	#6
Empowering	WebCT The feedback from the students was tremendous. There was lots of praise for the course material, which was written in such a way that it was easily understood. From an educational point of view, this was extremely good, because the student obtained instant feedback from the Internet and from the lecturer who facilitated the Internet sessions. Students where delighted with the Quizzes and especially with the Examinations, where they obtained their results immediately.	#7
	Respondus: Great, this was the answer to my dreams. The program did exactly what I wanted. Easy to operate and upload to WebCT.	#8
Didn't use it	Blogger: I was ... and could not remember the password even though I wrote it down, I kept on losing it and forgetting. I did however write my Blogs down on the program page which was handed out each week. I was <u>very</u> (underlined heavily) frustrated by not being able to get into Blogger. Comment:Very negative- EI?	#9

Table G.6 Range of perceived abilities: Participant 7

Able to use it	Need to master part of it	Empowering	Clueless	Did not use it
✓	✓	✓		✓

Appendix H

Outcomes of the analysis process: Participant 8

Table H.1	Coping strategies: Participant 8
Table H.2	Reasoning on CDM: Participant 8
Table H.3	Reasoning on DPS: Participant 8
Table H.4	Reasoning on SU: Participant 8
Table H.5	Reasoning on POS: Participant 8
Table H.6	Reasoning on OPT: Participant 8
Table H.7	Reasoning on Use Humour: Participant 8
Table H.8	Reasoning on SUPA: Participant 8
Table H.9	Reasoning perceived ability: Participant 8
Table H.10	Range of perceived abilities: Participant 8



Table H.1 Coping strategies: Participant 8

Possible strategies		Strategies used	
Active coping strategies	Problem focused coping	Cognitive decision making (CDM)	CDM- Thinking about ways to solve the problem
		Direct problem solving (DPS)	DPS- Practice DPS- Self study DPS- Use it
		Seeking understanding (SU)	SU- What could be learned from this
	Positive cognitive restructuring	Positivity (POS)	POS- Will use it in future POS- Mention the positive
		Control (CON)	
		Optimism (OPT)	OPT- Things will work out
		Use humour	Use humour
Distraction strategies	Distracting actions (DA)		
	Physical release of Emotions (PRE)		
Avoidance strategies	Avoidant actions (AVA)		
	Repression (REP)		
	Wishful thinking (WISH)		
Support seeking strategies	Support for actions (SUPA)	SUPA- Ask for help SUPA- Get help from ID SUPA- Learn from others	
	Support for feeling (SUPF)		

Table H.2 Reasoning on CDM: Participant 8

Coping strategy	Reasoning	Quotation	Number
CDM- Thinking about ways to solve the problem	Blaming	<i>I apologize to my Partners for not being an active participant in the conversations of the Yahoo Messenger. This was not due to any negative feeling towards them or Yahoo, but rather due to the fact that I needed the time to develop my e-learning programme.</i>	#1
		<i>Due to a lack of time involved in learning how to use the many technologies, I had to focus on those needed to get my program up and running.</i>	#2
	Made suggestion	<i>The show & tell was valuable in terms of learning from the examples: "Die mag van die voorbeeld spreek 'n ondubbelsinnige taal". The workshop on e-Testing by ... was equally valuable. Just felt sorry for her and any lecturer for that matter who has to lecture in the Internet Cafe. The acoustics is very bad and it makes it very difficult for a lecturer to lecture and students to hear. Just a thought!</i>	#3
		<i>The show & tell is very useful. With regards to Perspective: This is the 3rd programme that may be used to design assessments. In a situation where I am experiencing information over-load, I would prefer the designers to choose the best programme for us and then stick to that one only. Why do we need to know how to drive a car, bicycle and tractor when you need to go from point a to b?</i>	#4
		<i>The blogging is starting to feel like a useless exercise, which off course it is not. Maybe ... should give regular feed-back on the group's experience. I feel as if our comments are being ignored because we don't get feed-back.</i>	#5
		<i>With regards to Perspective: This is the 3rd programme that may be used to design assessments. In a situation where I am experiencing information over-load, I would prefer the designers to choose the best programme for us and then stick to that one only. Why do we need to know how to drive a car, bicycle and tractor when you need to go from point a to b?</i>	#6
	Perception negative	<i>After two days of information-overload, I ironically feel a sense of appreciation. This is like learning many languages simultaneously. While learning the first language you have to do an assignment in the next language. In the final analysis, this is like being glad that you have gone to the army, but do not wish to do it again... followed a softer teaching methodology by taking us through the journey step by step.</i> Comment: Note the use of humour- EI link?	#7

Table H.2 Reasoning on CDM: Participant 8 (cont.)

Coping strategy	Reasoning	Quotation	Number
CDM- Thinking about ways to solve the problem	Perception negative	<p><i>Due to my situation of near “computer-illiteracy” I did not have the time to explore Perception. For me having two similar programmes (the other being Respondus) was superfluous.</i></p> <p>Comment: Cognitive decision making- reasoning sound</p>	#8
	Perception positive	<p><i>After two days of information-overload, I ironically feel a sense of appreciation. This is like learning many languages simultaneously. While learning the first language you have to do an assignment in the next language. In the final analysis, this is like being glad that you have gone to the army, but do not wish to do it again. ... followed a softer teaching methodology by taking us through the journey step by step.</i></p> <p>Comment: Note the use of humour- EI link?</p>	#9
		<p><i>The library of the future will contain more computers than books. It will be unthinkable that a University of TECHNOLOGY does not in future have a computer centre that contains all computer programmes that are used in all departments at TUT. Management must address this vision. Take it or leave it until its too late.</i></p>	#10
		<p><i>In accordance with Prof. ... learning theory, it is important to answer the question WHY at the beginning of a lecture. Why are we going to lecture, what we are going to lecture? Why do we need to know, what we are going to be taught? This may sound petty, but it has great value. All lecturers should spend time on “selling” the content before offering it, because it forms the foundation of everything that follows it. If we see the value of the knowledge first, we tend to form a positive attitude (Bloom) towards it and will therefore want to have it. The mission is therefore more easily accomplished. Ask ..., she knows about this.</i></p> <p><i>Just a thought</i></p>	#11
		<p><i>The Blogger Programme is more useful to those who peruse its content, than those who create the content. Not getting feedback regarding all the effort by so many people that is put into the Blogging creates a feeling that the input has no outcome. But this is obviously only psychological</i></p>	#12
		<p><i>FrontPage lays the foundation for any programme that needs to be placed on WebCT. The importance of creating a structure on the WebCT programme cannot be underestimated and this is what FrontPage allows one to do. You can have all the “bells & whistles” at your disposal but if your programme is not logically structured, it is bound to fail.</i></p>	#13

Table H.2 Reasoning on CDM: Participant 8 (cont.)

Coping strategy	Reasoning	Quotation	Number
CDM- Thinking about ways to solve the problem	Perception positive	<p><i>The producing of a professional video makes Camtasia redundant. I believe that very few of the Partners, for understandable reasons, can appreciate the power of an effective training video. This technology, when done professionally, can encapsulate most of the other technologies. The only drawback is the expense involved in producing video.</i></p> <p>Comment: Note the reasoning - linkage with EI? Cognitive decision making</p>	#14
		<p><i>The great initiative of P@W will need to be kept alive in order to be a great success in future. Now is not the time to be faint hearted and thereby cause the project to lose momentum. Management will possibly need to extend not only the training of new partners but also the means to complement the project. That effectively means that every faculty will need a full-time instructional designer who basically knows the field to transform the current training system to at least a mixed e-learning system. Telematic Education will furthermore need more staff to assist in e-learning development. The most important aspect of the project is to extend the technology at all departments in order to be able to facilitate e-learning. Every lecture room should at least be equipped with ADSL, video projector, and DVD players. If this is not done, TUT will stay behind in terms of cutting edge training. Being a university of TECHNOLOGY it really is unthinkable that TUT does not have this technology already.</i></p>	#15
		<p><i>This is a very useful programme for complementing any text. It is in fact crucial in the Arts where the picture so often explains the concept without ambiguity. Corel Draw is a must for any department in the Arts Faculty.</i></p>	#16
		<p><i>Video conferencing is ideal for bringing to the lecture hall, an expert without major expenses attached. The technology involved in organising such a conference is however one point of concern. If the technology fails you on the day, then you have problems. This is an "all or nothing" technology.</i></p> <p>Comment: Cognitive decision making</p>	#17
		<p>WebCT: <i>WebCT is the heart of the e-learning system. What started off as a frightening perception regarding this formidable learning programme ended up being a very positive experience. This was due to the realization that for a programme to be so effective, it had to have many dimensions, functions, and possibilities. I believe that those institutions who do not buy-in to WebCT or a similar programme, will in future educational environment, be left behind.</i></p> <p>Comment: Positive reasoning</p>	#18



Table H.2 Reasoning on CDM: Participant 8 (cont.)

Coping strategy	Reasoning	Quotation	Number
CDM- Thinking about ways to solve the problem	Perception positive	<i>Respondus is user friendly and most of the Partners reacted positively towards its capabilities. It was enlightening that multiple-choice, which may be regarded by some as a “monkey-puzzle” with little educational value, turned out to be quite the opposite. I believe that this programme has the ability to accurately test the students’ knowledge.</i>	#19
		<i>An intervention that could increase the quality of learning, when understanding and applying narrative structure, was decided upon. A DVD teaching aid comprising examples from critically acclaimed movies and a presentation that focused specifically on providing insight into this aspect of scriptwriting was designed. A DVD on the Neo-Classical Paradigm, which is a prime example of classical dramatic narrative structure, was produced with the help of experts.</i>	#20
	User friendly	<i>Respondus is user friendly and most of the Partners reacted positively towards its capabilities. It was enlightening that multiple-choice, which may be regarded by some as a “monkey-puzzle” with little educational value, turned out to be quite the opposite. I believe that this programme has the ability to accurately test the students’ knowledge.</i>	#21



Table H.3 Reasoning on DPS: Participant 8

Coping strategy	Reasoning	Quotation	Number
DPS- Practice DPS- Self study	Perception positive	<i>My own blood, sweat, and tears. Struggling the way all computer illiterates struggle when first learning a program. My instructional designer helped, Partners helped and I even employed a personal friend to help me understand the programs, especially FrontPage.</i>	#1
DPS- Use it	Perception positive	<i>The Blogger Programme is more useful to those who peruse its content, than those who create the content. Not getting feedback regarding all the effort by so many people that is put into the Blogging creates a feeling that the input has no outcome. But this is obviously only psychological</i>	#2
		<i>The producing of a professional video makes Camtasia redundant. I believe that very few of the Partners, for understandable reasons, can appreciate the power of an effective training video. This technology, when done professionally, can encapsulate most of the other technologies. The only drawback is the expense involved in producing video.</i> Comment: Note the reasoning - linkage with EI? Cognitive decision making	#3

Table H.4 Reasoning on SU: Participant 8

Coping strategy	Reasoning	Quotation	Number
SU- What could be learned from this	Perception positive	<i>The most obvious impact of implementing the P@W project is going to be the need to expand the technology at all faculties at TUT in order to implement telematic programmes. A second need that will arise is the need to expand facilities at Telematic Education otherwise they will not be able to cope with the need to develop programmes. The P@W will in future still prove to be the most significant teaching and development strategy that this institution has embarked on.</i>	#1
		<i>In accordance with Prof. ... learning theory, it is important to answer the question WHY at the beginning of a lecture. Why are we going to lecture, what we are going to be taught? Why do we need to know, what we are going to be taught? This may sound petty, but it has great value. All lecturers should spend time on "selling" the content before offering it, because it forms the foundation of everything that follows it. If we see the value of the knowledge first, we tend to form a positive attitude (Bloom) towards it and will therefore want to have it. The mission is therefore more easily accomplished. Ask ..., she knows about this. Just a thought</i>	#2
		<i>The great initiative of P@W will need to be kept alive in order to be a great success in future. Now is not the time to be faint hearted and thereby cause the project to lose momentum. Management will possibly need to extend not only the training of new partners but also the means to complement the project. That effectively means that every faculty will need a full-time instructional designer who basically knows the field to transform the current training system to at least a mixed e-learning system. Telematic Education will furthermore need more staff to assist in e-learning development. The most important aspect of the project is to extend the technology at all departments in order to be able to facilitate e-learning. Every lecture room should at least be equipped with ADSL, video projector, and DVD players. If this is not done, TUT will stay behind in terms of cutting edge training. Being a university of TECHNOLOGY it really is unthinkable that TUT does not have this technology already.</i>	#3
		<i>This is a very useful programme for complementing any text. It is in fact crucial in the Arts where the picture so often explains the concept without ambiguity. Corel Draw is a must for any department in the Arts Faculty.</i>	#4
		<i>The Blogger Programme is more useful to those who peruse its content, than those who create the content. Not getting feedback regarding all the effort by so many people that is put into the Blogging creates a feeling that the input has no outcome. But this is obviously only psychological.</i>	#5

Table H.4 Reasoning on SU:Participant 8 (cont.)

Coping strategy	Reasoning	Quotation	Number
SU- What could be learned from this	Perception positive	<p><i>Our previous lecture made me feel sorry for the way I sometimes run over new students. We started the lecture on e-portfolios with the term hyperlink. I was hoping that I would during the lecture come to understand the term. Alas, at the end of the lecture, I had not progressed beyond the term hyperlink. I today still think that it has something to do with a "BAIE GROOT APTEEK".</i></p> <p>Comment: Use humour in a positive way</p>	#6
		<p>WebCT: <i>WebCT is the heart of the e-learning system. What started off as a frightening perception regarding this formidable learning programme ended up being a very positive experience. This was due to the realization that for a programme to be so effective, it had to have many dimensions, functions, and possibilities. I believe that those institutions who do not buy-in to WebCT or a similar programme, will in future educational environment, be left behind.</i></p> <p>Comment: Positive reasoning</p>	#7
		<p><i>The producing of a professional video makes Camtasia redundant. I believe that very few of the Partners, for understandable reasons, can appreciate the power of an effective training video. This technology, when done professionally, can encapsulate most of the other technologies. The only drawback is the expense involved in producing video.</i></p> <p>Comment: Note the reasoning - linkage with EI? Cognitive decision making</p>	#8
		<p><i>The technology involved in organising such a conference is however one point of concern. If the technology fails you on the day, then you have problems. This is an "all or nothing" technology.</i></p> <p>Comment: Cognitive decision making</p>	#9
		<p><i>Respondus is user friendly and most of the Partners reacted positively towards its capabilities. It was enlightening that multiple-choice, which may be regarded by some as a "monkey-puzzle" with little educational value, turned out to be quite the opposite. I believe that this programme has the ability to accurately test the students' knowledge</i></p>	#10

Table H.4 Reasoning on SU: Participant 8 (cont.)

Coping strategy	Reasoning	Quotation	Number
SU- What could be learned from this	Perception positive	<i>An intervention that could increase the quality of learning, when understanding and applying narrative structure, was decided upon. A DVD teaching aid comprising examples from critically acclaimed movies and a presentation that focused specifically on providing insight into this aspect of scriptwriting was designed. A DVD on the Neo-Classical Paradigm, which is a prime example of classical dramatic narrative structure, was produced with the help of experts.</i>	#11
		<i>The Show & Tell was, as always, very valuable in terms of gaining perspective on what works and what works better in webpage design.</i>	#12
		<i>Last week's show and tell as with this week's is very valuable in terms of incidental learning. People who work on the same projects, have the same problems and discuss useful solutions</i>	#13
	User friendly	<i>Respondus is user friendly and most of the Partners reacted positively towards its capabilities. It was enlightening that multiple-choice, which may be regarded by some as a "monkey-puzzle" with little educational value, turned out to be quite the opposite. I believe that this programme has the ability to accurately test the students' knowledge</i>	#14
	Unsure	<i>Some of the Partners, myself included, have to learn the following 8 "languages" before they can start designing their instructional programmes:</i> <i>WebCT, ePortfolios, Blogger, FrontPage, PowerPoint, Yahoo Mes., NetMeeting, Corel Draw.</i> <i>Is this realistic or am I computer illiterate?</i>	#15
	Make suggestion	<i>The show & tell is very useful. With regards to Perspective: This is the 3rd programme that may be used to design assessments. In a situation where I am experiencing information over-load, I would prefer the designers to choose the best programme for us and then stick to that one only. Why do we need to know how to drive a car, bicycle and tractor when you need to go from point a to b?</i>	#16
		<i>The blogging is starting to feel like a useless exercise, which off course it is not. Maybe ... should give regular feed-back on the group's experience. I feel as if our comments are being ignored because we don't get feed-back.</i>	#17

Table H.5 Reasoning on POS: Participant 8

Coping strategy	Reasoning	Quotation	Number
POS- Will use it in future	Perception positive	<i>I am impressed by the website (prenhall) because they have my entire prescribed book on offer.</i>	#1
		<i>FrontPage lays the foundation for any programme that needs to be placed on WebCT. The importance of creating a structure on the WebCT programme cannot be underestimated and this is what FrontPage allows one to do. You can have all the “bells & whistles” at your disposal but if your programme is not logically structured, it is bound to fail.</i>	#2
		WebCT: <i>WebCT is the heart of the e-learning system. What started off as a frightening perception regarding this formidable learning programme ended up being a very positive experience. This was due to the realization that for a programme to be so effective, it had to have many dimensions, functions, and possibilities. I believe that those institutions who do not buy-in to WebCT or a similar programme, will in future educational environment, be left behind.</i> Comment: Positive reasoning	#3
		<i>Respondus is user friendly and most of the Partners reacted positively towards its capabilities. It was enlightening that multiple-choice, which may be regarded by some as a “monkey-puzzle” with little educational value, turned out to be quite the opposite. I believe that this programme has the ability to accurately test the students’ knowledge.</i>	#4
POS- Mention the positive	Perception positive	<i>The most obvious impact of implementing the P@W project is going to be the need to expand the technology at all faculties at TUT in order to implement telematic programmes. A second need that will arise is the need to expand facilities at Telematic Education otherwise they will not be able to cope with the need to develop programmes. The P@W will in future still prove to be the most significant teaching and development strategy that this institution has embarked on.</i>	#5



Table H.6 Reasoning on OPT: Participant 8

Coping strategy	Reasoning	Quotation	Number
OPT- Things will work out	Perception positive	<i>The most obvious impact of implementing the P@W project is going to be the need to expand the technology at all faculties at TUT in order to implement telematic programmes. A second need that will arise is the need to expand facilities at Telematic Education otherwise they will not be able to cope with the need to develop programmes. The P@W will in future still prove to be the most significant teaching and development strategy that this institution has embarked on.</i>	#1

Table H.7 Reasoning on Use Humour: Participant 8

Coping strategy	Reasoning	Quotation	Number
Use humour	Made suggestion	<i>The show & tell is very useful. With regards to Perspective: This is the 3rd programme that may be used to design assessments. In a situation where I am experiencing information over-load, I would prefer the designers to choose the best programme for us and then stick to that one only. Why do we need to know how to drive a car, bicycle and tractor when you need to go from point a to b?</i>	#1
	Perception negative	<i>My feelings can only be described as "manic-calm". At times I felt overwhelmed by the constant flow of homework while I was trying to learn the "language" of the computer programs. It was like trying to direct Chinese workers during the process of building a nuclear plant, while still learning to speak Chinese. However, once the program was mastered, it became very enjoyable to be part of the group all involved in instructional design.</i> Comment: Note the use of humour to change the negative in positive	#2
	Perception positive	<i>I appreciated the help given to me by... and ... regarding creating e-portfolios. One does not always realize how much you know, until you see how little others know about your field of specialization. Today I can say: "I know I know a lot, because I know I know so little".</i>	#3
		<i>After two days of information-overload, I ironically feel a sense of appreciation. This is like learning many languages simultaneously. While learning the first language you have to do an assignment in the next language. In the final analysis, this is like being glad that you have gone to the army, but do not wish to do it again. ... followed a softer teaching methodology by taking us through the journey step by step.</i> Comment: Note the use of humour- EI link?	#4



Table H.7 Reasoning on Use Humour: Participant 8 (cont.)

Coping strategy	Reasoning	Quotation	Number
Use humour	Perception positive	<i>The show & tell is very useful. With regards to Perspective: This is the 3rd programme that may be used to design assessments. In a situation where I am experiencing information over-load, I would prefer the designers to choose the best programme for us and then stick to that one only. Why do we need to know how to drive a car, bicycle and tractor when you need to go from point a to b?</i>	#5
		<i>Our previous lecture made me feel sorry for the way I sometimes run over new students. We started the lecture on e-portfolios with the term hyperlink. I was hoping that I would during the lecture come to understand the term. Alas, at the end of the lecture, I had not progressed beyond the term hyperlink. I today still think that it has something to do with a "BAIE GROOT APTEEK".</i> Comment: Use humour in a positive way	#6

Table H.8 Reasoning on SUPA: Participant 8

Coping strategy	Reasoning	Quotation	Number
SUPA-Ask for help	Perception positive	<i>My instructional designer helped, Partners helped and I even employed a personal friend to help me understand the programs, especially FrontPage.</i>	#1
		<i>Now that I know what I know, I will need very little assistance form the instructional designers in creating the programs. I will however need a lot of help regarding the implementation and activation of the program.</i>	#2
SUPA-Get help from ID	Perception positive	<i>I appreciated the help given to me by... and ... regarding creating e-portfolios. One does not always realize how much you know, untill you see how little others know about your field of specialization. Today I can say: "I know I know a lot, because I know I know so little".</i>	#3
		<i>My own blood, sweat, and tears. Struggling the way all computer illiterates struggle when first learning a program. My instructional designer helped, Partners helped and I even employed a personal friend to help me understand the programs, especially FrontPage.</i>	#4
		<i>An intervention that could increase the quality of learning, when understanding and applying narrative structure, was decided upon. A DVD teaching aid comprising examples from critically acclaimed movies and a presentation that focused specifically on providing insight into this aspect of scriptwriting was designed. A DVD on the Neo-Classical Paradigm, which is a prime example of classical dramatic narrative structure, was produced with the help of experts.</i>	#5



Table H.8 Reasoning on SUPA: Participant 8 (cont.)

Coping strategy	Reasoning	Quotation	Number
SUPA-Learn from others	Perception positive	<i>The show & tell was valuable in terms of learning from the examples: "Die mag van die voorbeeld spreek 'n ondubbelsinnige taal". The workshop on e-Testing by ... was equally valuable. Just felt sorry for her and any lecturer for that matter who has to lecture in the Internet Cafe. The acoustics is very bad and it makes it very difficult for a lecturer to lecture and students to hear. Just a thought!</i>	#6
		<i>The Show & Tell was, as always, very valuable in terms of gaining perspective on what works and what works better in webpage design.</i>	#7
		<i>Last week's show and tell as with this week's is very valuable in terms of incidental learning. People who work on the same projects, have the same problems and discuss useful solutions.</i>	#8

Table H.9 Reasoning perceived ability: Participant 8

Reasoning	Quotation	Number
Able to use it	<i>This is a very useful programme for complementing any text. It is in fact crucial in the .. where the picture so often explains the concept without ambiguity. Corel Draw is a must for any department in the ... Faculty.</i>	#1
	<i>The Blogger Programme is more useful to those who peruse its content, than those who create the content. Not getting feedback regarding all the effort by so many people that is put into the Blogging creates a feeling that the input has no outcome. But this is obviously only psychological</i>	#2
	<i>FrontPage lays the foundation for any programme that needs to be placed on WebCT. The importance of creating a structure on the WebCT programme cannot be underestimated and this is what FrontPage allows one to do. You can have all the "bells & whistles" at your disposal but if your programme is not logically structured, it is bound to fail.</i>	#3
	<i>The producing of a professional video makes Camtasia redundant. I believe that very few of the Partners, for understandable reasons, can appreciate the power of an effective training video. This technology, when done professionally, can encapsulate most of the other technologies. The only drawback is the expense involved in producing video.</i> <i>Comment: Note the reasoning - linkage with EI? Cognitive decision making</i>	#4



Reasoning	Quotation	Number
	<p><i>Video conferencing is ideal for bringing to the lecture hall, an expert without major expenses attached. The technology involved in organising such a conference is however one point of concern. If the technology fails you on the day, then you have problems. This is an “all or nothing” technology.</i></p> <p><i>Comment:</i> <i>Cognitive decision making</i></p>	#5
	<p>WebCT: <i>WebCT is the heart of the e-learning system. What started off as a frightening perception regarding this formidable learning programme ended up being a very positive experience. This was due to the realization that for a programme to be so effective, it had to have many dimensions, functions, and possibilities. I believe that those institutions who do not buy-in to WebCT or a similar programme, will in future educational environment, be left behind.</i></p> <p><i>Comment:</i> <i>Positive reasoning</i></p>	#6
	<p><i>Respondus is user friendly and most of the Partners reacted positively towards its capabilities. It was enlightening that multiple-choice, which may be regarded by some as a “monkey-puzzle” with little educational value, turned out to be quite the opposite. I believe that this programme has the ability to accurately test the students’ knowledge.</i></p>	#7
Need to master part of it	<p><i>Now that I know what I know, I will need very little assistance from the instructional designers in creating the programs. I will however need a lot of help regarding the implementation and activation of the program</i></p>	#8
Empowering	<p><i>My feelings can only be described as “manic-calm”. At times I felt overwhelmed by the constant flow of homework while I was trying to learn the “language” of the computer programs. It was like trying to direct Chinese workers during the process of building a nuclear plant, while still learning to speak Chinese. However, once the program was mastered, it became very enjoyable to be part of the group all involved in instructional design.</i></p> <p><i>Comment:</i> <i>Note the use of humour to change the negative in positive</i></p>	#9
	<p><i>Respondus is user friendly and most of the Partners reacted positively towards its capabilities. It was enlightening that multiple-choice, which may be regarded by some as a “monkey-puzzle” with little educational value, turned out to be quite the opposite. I believe that this programme has the ability to accurately test the students’ knowledge</i></p>	#10

Table H.10 Range of perceived abilities: Participant 8

Able to use it	Need to master part of it	Empowering	Clueless	Did not use it
✓	✓	✓		

Appendix I

Outcomes of the analysis process: Participant 9

Table I.1	Coping strategies: Participant 9
Table I.2	Reasoning on CDM: Participant 9
Table I.3	Reasoning on DPS: Participant 9
Table I.3	Reasoning on OPT: Participant 9
Table I.5	Reasoning on AVA: Participant 9
Table I.6	Reasoning on SUPA: Participant 9
Table I.7	Reasoning perceived ability: Participant 9
Table I.8	Range of perceived abilities: Participant 9



Table I.1 Coping strategies: Participant 9

Possible strategies		Strategies used	
Active coping strategies	Problem focused coping	Cognitive decision making (CDM)	CDM- Thinking about ways to solve the problem
		Direct problem solving (DPS)	DPS- Divided work in chunks DPS- Practice DPS- Use it
		Seeking understanding (SU)	
	Positive cognitive restructuring	Positivity (POS)	
		Control (CON)	
		Optimism (OPT)	OPT- Will be able to use it
		Use humour	
Distraction strategies	Distracting actions (DA)		
	Physical release of Emotions (PRE)		
Avoidance strategies	Avoidant actions (AVA)	AVA- Did not use it	
	Repression (REP)		
	Wishful thinking (WISH)		
Support seeking strategies	Support for actions (SUPA)	SUPA- Learn from others	
	Support for feeling (SUPF)		

Table I.2 Reasoning on CDM: Participant 9

Coping strategy	Reasoning	Quotation	Number	
CDM- Thinking about ways to solve the problem	Made suggestion	<i>I find hands on computer lesson too difficult to follow, due to the fact that 'what are we doing? and how its done? ie the buttons on the keyboard, in the head of the presenter.</i>	#1	
		<i>An ideal situation for me will be to have, what? on a piece of paper so as to understand the process and actully see what ist that I,m trying to execute step by step. Then I can struggle only with the ,How?</i>		
		<i>Insufficient time was allocated to microsoft front page, or was it meant to be a warm up exercise. I will appreciate a repeat of it.</i>	#2	
		HOT POTATO & WIMBA SESSION		
		<i>I would like to use both softwares in my course development, the hands on session was too short. If times allows, I will appreciate a repeat session.</i>	#3	
		Enjoyable Feel good about work done	<i>The most outstanding achievement was the development of the drag and drop assessments using Perception. The open day movie that I developed, displayed how technology can be used effectively in communication. The faculty PRO office was overwhelmed and requested a copy for use during her road shows</i>	#4
	Perception positive	WebCT: <i>It's a magnificent learning management system which can be tailor - made to suit individual needs. The features of the system provided me with some of the solutions to my teaching problems. I divided my tasks into chunks. Began with the easiest then proceeded to more challenging tasks. I am comfortable with creating pages and uploading files and assessments quizzes. I still need to explore the use of chat room and students presentation for purposes of assignments and to manage students records.</i>	#5	
		<i>In the development of the web materials, considerations were made to some of the established online theories, viz. ADDIE model, daisy wheel, online interaction model, etc. The development was also influenced by / aligned to the requirements of the Outcome Based Education policy, and the consistent functionality and usability of icons, graphics, navigations and the layout of web pages.</i>	#6	



Table I.3 Reasoning on DPS: Participant 9

Coping strategy	Reasoning	Quotation	Number
DPS- Divided work into chunks	Perception positive	<i>I divided my tasks into chunks. Began with the easiest then proceeded to more challenging tasks.</i>	#1
DPS- Practice	User friendly	Corel Draw: <i>It was very useful in addressing graphic problems on my web pages. Practice.</i>	#2
DPS- Use it	Enjoyable	Front Page <i>I enjoyed using the software. The beauty of the program made me sit endless hours on the computer. I had to explore the bars and dropdown menu lists of Microsoft office.</i>	#3
		Perception: <i>The program is exciting; I derived pleasure in using the technology. Although I still have to master the question manager system. I created and planned questions in front page and inserted them in perception.</i>	#4
	User friendly	Respondus: <i>It has a friendly environment, most of my assessments were created using respondus. Impressed by the technology at first sight.</i>	#5
Camtasia: <i>An excellent software that I used with PowerPoint slides to summarise some of the study units. I prepared the PowerPoint slides with animation and the script.</i>		#6	
Corel Draw: <i>It was very useful in addressing graphic problems on my web pages. Practice</i>		#7	

Table I.4 Reasoning on OPT: Participant 9

Coping strategy	Reasoning	Quotation	Number
OPT- Will be able to use it	Enjoyable	<i>Creating a webct folder was exciting, its one of the hands on exercises that has made feel good and confident. At the end of the day I had completed my task successfully. I'm looking forward to more exciting events that will be as successful as the webct folders</i>	#1



Table I.5 Reasoning on AVA: Participant 9

Coping strategy	Reasoning	Quotation	Number
AVA- Didn't use it	Not used	Video <i>Not yet explored</i> <i>Awaiting the results of the scripts submitted.</i>	#1
		Video Conferencing <i>Too terrified to think of one.</i> <i>The last item to attempt on my list.</i>	#2

Table I.6 Reasoning on SUPA: Participant 9

Coping strategy	Reasoning	Quotation	Number
SUPA- Learn from others	Perception positive	<i>The presentations were excellent, creativity was displayed by some of my colleagues. I learnt new ways of approaching my work. It was really encouraging and fulfilling to receive positive responses from you.</i>	#1
		<i>I always look forward to this session. It gives us an opportunity to share and reflect on our experiences as we develop materials. I found it to be very interesting, for me that's where actual learning takes place.</i>	#2

Table I.6 Reasoning perceived ability: Participant 9

Reasoning	Quotation	Number
Able to use it	<p>WebCT It's a magnificent learning management system which can be tailor - made to suit individual needs. The features of the system provided me with some of the solutions to my teaching problems.</p> <p>I am comfortable with creating pages and uploading files and assessments quizzes. I still need to explore the use of chat room and students presentation for purposes of assignments and to manage students records.</p>	#1
	<p>Respondus It has a friendly environment, most of my assessments were created using respondus.</p> <p>Impressed by the technology at first sight.</p> <p>I am comfortable in using it</p>	#2
	<p>Camtasia</p> <p>An excellent software that I used with PowerPoint slides to summarise some of the study units.</p> <p>I prepared the PowerPoint slides with animation and the script. Uploading the file to WebCT remain a problem.</p>	#3
	<p>Corel Draw</p> <p>It was very useful in addressing graphic problems on my web pages.</p> <p>I am capable to use the software</p>	#4
Need to master part of it	<p>WebCT</p> <p>I am comfortable with creating pages and uploading files and assessments quizzes. I still need to explore the use of chat room and students presentation for purposes of assignments and to manage students records.</p>	#5
	<p>Perception</p> <p>I have to sharpen my ability to manage question sets.</p>	#6
	<p>Camtasia</p> <p>Uploading the file to WebCT remain a problem.</p>	#7
Empowering	<p>Perception</p> <p>The program is exciting; I derived pleasure in using the technology</p>	#8
	<p>Corel Draw</p> <p>It was very useful in addressing graphic problems on my web pages</p>	#9
	<p>Front Page</p> <p>I enjoyed using the software. The beauty of the program made me sit endless hours on the computer.</p> <p>Content.</p>	#10



Table I.7 **Range of perceived abilities: Participant 9**

Able to use it	Need to master part of it	Empowering	Clueless	Did not use it
✓	✓	✓		✓

Appendix J

Outcomes of the analysis process: Participant 10

Table J.1	Coping strategies: Participant 10
Table J.2	Reasoning on CDM: Participant 10
Table J.3	Reasoning on DPS: Participant 10
Table J.4	Reasoning on AVA: Participant 10
Table J.5	Reasoning perceived ability: Participant 10
Table J.6	Range of perceived abilities: Participant 10



Table J.1 Coping strategies: Participant 10

Possible strategies		Strategies used	
Active coping strategies	Problem focused coping	Cognitive decision making (CDM)	CDM- Thinking about ways to solve the problem
		Direct problem solving (DPS)	DPS- Use it
		Seeking understanding (SU)	
	Positive cognitive restructuring	Positivity (POS)	
		Control (CON)	
		Optimism (OPT)	
		Use humour	
Distraction strategies	Distracting actions (DA)		
	Physical release of Emotions (PRE)		
Avoidance strategies	Avoidant actions (AVA)	AVA- Did not try to implement AVA- Did not use it AVA- Stop using it	
	Repression (REP)		
	Wishful thinking (WISH)		
Support seeking strategies	Support for actions (SUPA)		
	Support for feeling (SUPF)		



Table J.2 Reasoning on CDM: Participant 10

Coping strategy	Reasoning	Quotation	Number
CDM- Thinking about ways to solve the problem	Perception positive	<p><i>The question can now be asked why technology in a computer based learning area. What difference can it make?</i></p> <p><i>The problem which we are confronted with is time. The student must reach a certain level of competency and must be able to use the programs effectively.</i></p> <p><i>The reason why I want to use a Learning Management System like WebCT is for uploading of documents which is part of the theoretical outcomes of the program for example the National Curriculum Statement which is the core of the learning area. This document gives the student guidance through the learning areas, which are important to teach the learning area in a school. The LMS is also used to upload student groups and assignments and also for the preparation of lesson plans.</i></p> <p><i>Task and assignments and their due date is a part of the learning area which is also very important, especially if the student missed the lesson he/she can use WebCT for reverence. The LMS also made provision to manage working groups and report back can be done by the students. It helps me to manage my class room activities much more effectively.</i></p> <p><i>The project which I am very proud of is on how to use the keyboard effectively.</i></p> <p><i>On a CD the student can step by step go through the instructions to manage him/herself to use the keyboard effectively.</i></p> <p><i>The students are also using a typing tutor tool to increase there skill and keyboard abilities. On this program, progress is monitor and results are immediately available. Feedback is very important to the students for motivational purpose and also to measure their own progress.</i></p>	#1

Table J.3 Reasoning on DPS: Participant 10

Coping strategy	Reasoning	Quotation	Number
DPS- Use	Enjoyable	Camtasia: <i>Het dit onmiddelik aanvaar en geniet</i>	#1
		CorelDraw <i>Gebruik nogsteeds en geniet die program baie</i>	#2
		Camtasia <i>Users friendly en lekker om te gebruik in my vakgebied</i>	#3
		FrontPage <i>Meer vertrouwd met die program en weet ook nou hoe om te zip en te upload op WebCT en watter link om te kies op te maak.</i>	#4
	User friendly	Respondus <i>Gebruik Respondus om toetse op te laai</i>	#5
		Respondus <i>Het Respondus baie positief beleef en users friendly</i>	#6
		Camtasia <i>Users friendly en lekker om te gebruik in my vakgebied.</i>	#7
	Unsure	WebCT <i>Het groot deel van die program bemeester, vergeet net af en toe die stappe om op te laai. Nog onseker oor sekere afdeling maar is seker sal dit bemeester soos ek dit gebruik.</i>	#8

Table J.4 Reasoning on AVA: Participant 10

Coping strategy	Reasoning	Quotation	Number
AVA- Did not try to implement	Did not focus on mastering it	Perception <i>Nog nie bemeester nie</i>	#1
AVA- Did not use it	Not used	Video <i>Nog nie gebruik</i>	#2
		Perception <i>Nie van toepassing op my vakgebiednie- het dit ook nie gebruik nie</i>	#3
		Video <i>Voel nie die nodigheid vir my vak om te gebruik</i>	#4
		Comment: Compare with other participants who also perceived some of the technologies as not related to subject area _ possible EI linkage?	
		Video conferencing <i>Voel dis nie nodig om te gebruik in my vak nie</i>	#5
AVA- Stop using it	Not used	Blog <i>Gebruik nie meer- dink dit is nie meer nodig</i>	#6

Table J.5 Reasoning perceived ability: Participant 10

Reasoning	Quotation	Number
Able to use it	Respondus Het Respondus baie positief beleef en users friendly	#1
	Respondus Gebruik Respondus om toetse op te laai	#2
	CorelDraw Gebruik nogsteeds en geniet die program baie	#3
	Camtasia Users friendly en lekker om te gebruik in my vakgebied.	#4
Need to master part of it	FrontPage Het nogal gespook met die navigations en om te "save" om op WebCt te laai	#5
	FrontPage Meer vertrouwd met die program en weet ook nou hoe om te zip en te upload op WebCT en watter link om te kies op te maak.	#6
	WebCT Het groot deel van die program bemeester, vergeet net af en toe die stappe om op te laai. 16. Nog onseker oor sekere afdeling maar is seker sal dit bemeester soos ek dit gebruik.	#7
	Perception Nog nie bemeester nie	#8
Empowering	Video conferencing Hou baie van die media	#9
	CorelDraw Het dit van die begin af geniet om die veranderings op illustrasies en foto's aante bring.	#10
	Blogger Het van die begin af geniet om te blog <i>Comment: Enjoy- but only blogged twice?</i>	#11
	Yahoo Messenger Baie geniet en geniet dit nogsteeds baie-wens ons kan ook ons kollegas in ons departemente op Yahoo oopmaak!	#12
	Camtasia: Het dit onmiddelik aanvaar en geniet	#16
	Camtasia Users friendly en lekker om te gebruik in my vakgebied	#17

Table J.6 Range of perceived abilities: Participant 10

Able to use it	Need to master part of it	Empowering	Clueless	Did not use it
✓	✓	✓		

Appendix K

Table K.1 refers to a survey of inventories as discussed in chapter 3 p. 108.

Table K.1 Survey of inventories

Inventory	Scales
The Miller Behavioral Style Scale (MBSS)	<ul style="list-style-type: none"> • Vigilant attentional style • Avoiding attentional style
The Mainz Coping Inventory	<ul style="list-style-type: none"> • Vigilance • Cognitive avoidance
Billings and Moos Coping Measures	<ul style="list-style-type: none"> • Appraisal-focused coping • Problem-focused coping <ul style="list-style-type: none"> ❖ Information seeking ❖ Problem solving • Emotion-focused coping <ul style="list-style-type: none"> ❖ Affective regulation ❖ Emotional discharge
The Ways of Coping Questionnaire (WCQ)	<ul style="list-style-type: none"> • Confrontive coping • Distancing • Self-controlling • Seeking social support • Accepting responsibility • Escape-avoidance • Planful problem solving • Positive reappraisal
The Adolescent Coping Orientation for Problem Experiences Inventory (A-COPE)	<ul style="list-style-type: none"> • Ventilating feelings • Seeking diversions • Developing self-reliance and optimism • Solving family problems • Avoiding problems • Seeking spiritual support • Investing in close friends • Seeking professional support • Engaging in demanding activity • Being humorous • Relaxing



Table K.1 Survey of inventories (cont.)

Inventory	Scales
The COPE Scale: Theoretically derived dimensions	<ul style="list-style-type: none"> • Active coping • Planning • Suppression of competing activities • Restraint coping • Seeking social support for instrumental reasons • Positive reinterpretation and growth • Acceptance • Turning to religion • Focus on and venting of emotions • Denial • Behavioural disengagement • Mental disengagement
CCSC & HICUPS	<ul style="list-style-type: none"> • Active coping strategies <ul style="list-style-type: none"> ❖ Problem focused coping <ul style="list-style-type: none"> ➢ Cognitive decision making ➢ Direct problem solving ➢ Seeking understanding ❖ Positive cognitive restructuring <ul style="list-style-type: none"> ➢ Positivity ➢ Control ➢ Optimism • Distraction strategies <ul style="list-style-type: none"> ❖ Distracting actions ❖ Physical release of emotions • Avoidance strategies <ul style="list-style-type: none"> ❖ Avoidant actions ❖ Repression ❖ Wishful thinking • Support seeking strategies <ul style="list-style-type: none"> ❖ Support for actions ❖ Support for feeling



Appendix L

Consent document

Linkages between emotional intelligence and coping strategies in mastering new educational technologies

Dear Colleague

I am a doctoral student in the department Curriculum Studies at the University of Pretoria. As a partial fulfilment of the doctoral requirements, I am planning to conduct a study exploring the mastering of new technologies in a blended learning environment. The purpose of the study will be to explore and describe linkages between emotional intelligence and the ability to cope with new educational technologies. Your participation in this study is requested because of your experience as part of the Partners@Work programme. Your participation is voluntarily and you may withdraw from the study at any time and you will not be disadvantaged in any way if you decide to withdraw. Participating in the study will require approximately 2 hours for an in-depth interview. With your permission the interviews will be audio taped and transcribed. Tapes will be kept safely at Telematic Education and only the researcher will have access to the tapes.

The information supplied by you will be confidential and transcriptions will randomly identify participants as participant A, B or C, etc.

Data gathered from the study will be used for educational purposes in an attempt to clarify the role of emotional intelligence and coping with new technologies in order to provide guidelines to facilitators to optimise training in blended learning courses.

I will be contacting you shortly to answer any questions you might have concerning your participation in the study. I appreciate your thoughtful consideration of my request and I look forward to your participation in the study.

Sincerely,

Janette Kruger
Cell: 0829233621
E-mail: krugerj@tut.ac.za

Consent form:

I, _____, have been informed about this study, and I agree to participate in this study with Janette Kruger.

Signature Participant _____ Date _____

Signature Researcher _____ Date _____