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 WebCT[12]* (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).

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[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 **Group1** 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 tend 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 I, 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.

> 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 that is innovative and new, it may be potentially broadly applicable in future research.

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).