

Chapter 5: Conclusions

1 Introduction

In chapter four I discussed the results and findings of the central question. In chapter five I will summarise the research by focusing on the research question, critical questions and the results. A discussion of lessons that can be learned from the research follows. This includes a methodological, substantive and scientific reflection of the research. Finally, recommendations for policy making and practice and further research follow.

2 Summary

This study focuses on what happens and why it happens when two diverse tertiary cultures established on different continents, meet around a computer-mediated situation. The project was registered at Stanford under the code-name “ELISA” (e-learning initiative in South Africa) and was initially intended as a three-year project from 2006 to 2008. This study involves the pilot phase of the ELISA project. The cultural divide between Stanford and South Africa presented huge obstacles, yet the mutual will to participate ensured cooperation, at least for the pilot phase. The research questions are summarised as follows:

Table 19: Research questions

Question	Formulation	Rationale
Main research question	What happens when two differing tertiary cultures meet around a common subject in a computer-mediated situation, and why does it happen?	In order to achieve the purpose of the study, it is necessary to develop an understanding of what happens when a North-South partnership between members situated in different continents, takes place. The reason why this is necessary is to contribute to the existing body of literature regarding the successes and failures of North-South partnerships.



		Another reason is to offer recommendations pertaining to the study and to formulate recommendations for further research.
Central question	What happens when an international learning module, compiled by an American university is adapted for a South African HEI, and implemented in a computer-mediated context?	In order to achieve the purpose of the study, it is necessary to explore different elements regarding the international learning module. One has also to explore the different aspects of human behaviour of the role players.
Critical question 1	What dialogue emerges and why does it emerge?	In order to answer the main and central questions, one has to focus on the type of dialogue that emerges from the partners. The answer to why dialogue emerges is that communication lies at the root of the underlying principles of the partnership. Dialogue is indispensable from the beginning to the completion of the project because ideas and critical issues have to be communicated and are to be raised and discussed. Dialogue is also a way of broadening one's own thought processes and is thus important in an outreach project.
Critical question 2	How and why is shared meaning created?	The intention to explore the creation of shared meaning is to give an answer to the central question because



		shared meaning forms an essential part of the learning module. The reason why shared meaning is created is that this process starts with shared ideas that result in a variety of objectives in order to reach various goals.
Critical question 3	How do we deal with cultural differences?	In order to answer the central question, it is necessary to get an understanding and awareness of many different cultures that exist side by side. Global objectives and local needs are combined to create a workable model.
Critical question 4	Which aspects of the process work well and why and how can they be improved to compensate for those that do not work well?	Positive aspects form part of the international learning module. In order to answer the central question, it is crucial to identify these positive aspects as well as why they turned out to be positive. These aspects can be used to compensate for the less successful aspects.
Critical question 5	Which aspects do not work well and why and how can they be improved?	In order to answer the central question, it is necessary to determine aspects that do not work well. Information on how these aspects can be improved can contribute towards a successful learning module without inherent negative aspects.

The rationale for the study is to contribute to the growing body of literature on cooperation between HEIs in developing and developed countries as well as to contribute to the domain of cross-cultural education. The focus of the study is to explore the effect of commonalities and cultural differences on cooperative learning at organisational level.

The literature review explores the influence of various inter-relating aspects such as the international Digital Divide, factors contributing to the Digital Divide, HEIs, the role of technology, cooperative learning, what dialogue emerges and why does it emerge, how is shared meaning created and why is it created, and how do we deal with cultural differences (discussed under Chapter 2, 2.1 to 7). The influence of positive and negative aspects on the learning process as well as how it can be improved is also explored.

The central question *What happens when an international learning module, compiled by an American university is adapted for a South African HEI, and implemented in a computer-mediated context?* involves various inter-relating aspects. The international Digital Divide can be described as the phenomenon of citizens with access to technology (the well-resourced) and those without access to technology (the under-resourced). Northern hemisphere countries such as North America, Europe, parts of Asia, and Australia and New Zealand in the southern hemisphere, are regarded as industrialised, wealthy and are scientifically and technologically advanced. Contrary to this, countries located in the Southern hemisphere as well as some Asian countries, show a lack of development when considered at the international level. Apart from the international Digital Divide there exist numerous other divides among people and within countries.

A multitude of factors contribute to the Digital Divide. Uneven development all over the globe, as well as varying computer and Internet access, are regarded as indications of the Digital Divide. Income differentials contribute to the chasm between the well-resourced and the under-resourced and account to a certain extent for the Digital Divide. South Africa is an example of a developing country as well as a developed country that contains two societies in one. The quality of telecommunication infrastructure, uneven distribution of fixed lines, the lack of competition in the telecommunications industry and excessive costs further contribute to the Digital Divide. Geographic barriers prevent students from becoming technically literate and reduce people's educational opportunities. Human capital comprising people's levels of education, literacy, language proficiency and skills contribute to the difference between the well-resourced and the under-resourced. Literacy barriers may lead to deprivation of knowledge and thus result in a difference in socio-economic levels. Language is regarded as a factor that initially contributed to the Digital Divide as a significant number of websites are only in English. Culture exists in various subsets of human behaviour and several attributes are present in all cultures. These attributes contribute further to the Digital Divide.

Several initiatives are available to bridge the Digital Divide. These include economic growth and development, human capital and investment, Internet literacy, Internet access, technology diffusion and telecommunication infrastructure.

Economic growth and development is identified as one of the major attempts to decrease the Digital Divide. Direct foreign investment, stable political and financial governance, capital and labour contribute to economic growth and development. National enterprises can create growth, development, revenue, empowerment and poverty alleviation. The enrichment of human capital is regarded as one of the major factors to bridge the Digital Divide. Education is an important tool in the endeavour to develop growth, expertise and human capital. Education enables Internet literacy and access, both important aspects of empowerment. Digital literacy is regarded as a similar skill to numeracy and literacy and should form part of all educational institutions. Special entry courses for those who are technical illiterate, programmes that focus on specific content, applications that contain locally relevant content, and programmes in native languages may be efficient and appropriate measures to promote Internet literacy. Initiatives such as the diffusion of technology improve communication and promote development, especially in rural areas. Income determines the use of technology. Higher income results in the increased use of technology. My findings indicate that the majority of students at Stanford possess their own computers and laptops. The promotion and expansion of telecommunication infrastructures, the affordability of wireless technology as well as the availability of the Internet contribute to the attempts to decrease the Digital Divide.

Regarding the international Digital Divide I came to the conclusion that there is a significant divide between Stanford located in the Northern hemisphere as opposed to Pretoria located in the Southern hemisphere. My findings correlate with the literature on income differentials that identify income differentials as one of the main contributors to the Digital Divide (discussed under Chapter 2, 2.1.3.1). Although the South African economy is classified as a middle income economy various barriers exist to the development of economic growth. South Africa is a classic example of two societies in one. At the one extreme is a modern, affluent, well-resourced society. At the other extreme there is an under-resourced society that is characterised by poverty, malnutrition, and the lack of electricity, running water, proper health care and modern sanitation. The term Digital Divide could undeniably have been formulated for South Africa. The literature review of the telecommunication infrastructure indicates that it is one of the important factors that contributes to the Digital Divide. I found that because of inadequate telecommunication some of the ELISA students had no Internet access at home. Geographic barriers proved to be an obstacle to students who had to attend face-to-face contact sessions away from home. My findings show that this was indeed problematic for some of the ELISA students. One student resided in Nelspruit and reported that travelling between Pretoria and Nelspruit (a distance of 334 km) proved to be time-consuming and costly. My findings correlate with the literature that regards human capital as a determining factor of the Digital Divide (discussed under Chapter 2, 2.1.3.4). The ELISA students comprised some highly talented students who achieved high marks, as well as one student who decided

to leave the programme due to insufficient technical skills. Literacy is identified as a factor that contributes to the divide between the well-resourced and the under-resourced. The ELISA students who completed the project, however, enjoyed sufficient schooling and tertiary education and were not prone to a literacy barrier. Much of the literature regards culture as an expression of the Digital Divide. Although the ELISA students represented different backgrounds, especially different cultural backgrounds, these differences did not significantly influence the programme. Surprisingly the cultural differences that indeed influenced the programme emerged not from the students, but from the academic team leaders and members on both sides. Right from the outset it was clear that a definite Stanford culture was opposed to a hard-to-define UP and TUT culture. The frequently used phrase *we at Stanford* symbolised a homogeneity among Stanford colleagues as opposed to a more individual outlook among UP and TUT colleagues. Contributing cultural differences between the two teams included authority, conformity, conflict, individualism, survival-of-self, innovation, ethnicity, creativity, role division, fairness, particular ability, particular obsession, negativity, stability, predictability, personal power, unequal power relations, task orientation, transparency, and national ownership. These differences are further described in Chapter 5, 3.1. Finally a lack of mutual trust, of shared decision making, of commitment, and stability influenced the project to such an extent that it was discontinued.

Recently higher education changed significantly and will continue to change in the 21st Century. The literature review indicates that this is a national and international trend. Several developments altered higher education radically while challenges such as escalating student numbers, return on investments, financial constraints, decreasing resources and competition between service suppliers pressurised HEIs to adapt. Increasing educational needs compel HEIs to provide in these needs and to adapt to a more flexible learning style. My findings indicate that South Africa is prone to these factors. The ELISA programme is an intervention where the students furthered their careers whilst studying part time. This phenomenon illustrates the importance of higher education for students in South Africa to better their lives. The ELISA programme was hosted at TUT which is the largest residential HEI in South Africa.

New technologies are changing all facets of society. The literature review shows that educational technology should improve the learning process through increased productivity (Chapter 2, 2.2.2). Learners should be technologically literate and use technology to achieve a variety of goals. The ELISA students used technology to seek information, integrate new and existing information, collect relevant information and gather resources. The students also used technology as a communication tool to facilitate synchronous as well as asynchronous interaction between themselves and members of the research and academic teams. One of the most significant functions of technology is to create change. Educational technology necessitates support and training. The TUT technical team offered support on a permanent basis. My findings indicate that the majority of the students needed more technological training to ensure maximum benefits.

The critical question *What dialogue emerges and why does it emerge?* involves various underlying principles. My findings correlate with the literature review that indicate that cooperative research partnerships are based on various principles such as mutual trust, shared decision making, national ownership and transparency (discussed under Chapter 2, 5, *What dialogue emerges and why does it emerge*). Unequal power relations and funding are fundamental principles that either result in the success or the failure of partnerships.

The dialogue between Stanford, TUT and UP addressed the following themes: The objective of the proposed collaboration, the draft narrative for the research, the academic design and implementation of the project, the proposal outline, the time frame, the schedule for collaboration, the curriculum specifications, the course development and proposal outline, the contextualisation of learning material, the two-way learning process, the collaborative HEIs, technology, and sponsorship, funding and budget.

The project had positive as well as negative aspects. Positive aspects related to the national ownership of the curriculum that enabled the students to make the learning material their own and put it to professional use. The combination of course material as well as the blended learning material resulted in a significant learning experience that enabled the students to further their careers. They could complete the project without interruption at work in order to be financially independent. The development of critical thinking skills and dispositions were two of the most important aspects. The dispositions enabled them to look at questions from different angles and not to take reading material at face value. Some of the students regarded the use of the Internet as positive and essential for research purposes. Feedback and motivation were positive aspects due to the punctuality and encouragement of the teaching assistants. Negative aspects proved to have a detrimental effect on the use and application of the module. Ambiguity arose because previously agreed upon aspects such as the contextualization of the curriculum was later regarded as unsatisfactory. Misconceptions regarding the selection of the TUT participants occurred. Unequal power relations disturbed the relations between the partners. Another complicated aspect was the funding-and-budget arrangements. The South African team had already prepared for the second phase of the project when it was discontinued. From a South African perspective it was also hoped that, once the pilot phase was completed, more students would benefit from the outreach initiative. These multiple negative aspects resulted in a lack of mutual trust between the two teams. My findings confirm that a lack of mutual trust proved to be a challenging aspect of the ELISA project. UP was uncertain about Stanford's motives and what they could offer. UP's doubts arose from the fact that northern hemisphere countries were actively in quest of partnerships with universities in the southern hemisphere.

Initially both Stanford and UP agreed to shared decision making. The project leaders on both sides were in complete agreement about the contextualisation of the original curriculum by adapting some learning material relevant to the South African context. Later on it became clear that the project funders objected to the way that the project had been conducted. This was because the contextualised curriculum differed

from the original curriculum that was proposed for possible future participating HEIs. Stanford later on referred to the mutually-agreed-to negotiated content as “never a good match” (Blignaut & Conradie, 2006).

Despite the disagreement that arose about the contextualised curriculum, national ownership of the learning material seemed to be one of the positive aspects of the ELISA programme. The journalism students used the opportunity to make the learning material their own and this resulted in computer-generated documents that could be used in future.

My findings correlate with the literature that refers to unequal power relations as characteristic of North-South partnerships (discussed under What dialogue emerges and why does it emerge, Chapter 2, page 60). The ELISA programme revealed a discrepancy about power where UP and TUT did not agree to the exclusive authority of Stanford. This authority, however, involved the power to determine project success or failure. This authority also included the control over funding and the power to decide on project continuation or termination. Stanford kept the funds in the United States and only settled expenses already incurred.

The critical question *How is shared meaning created and why is it created?* comprises common purposes, common adversaries and common incentives. My findings correlate with the literature which indicates that cooperative learning can achieve shared goals and shared meanings. Motivation is essential for successful learning while intrinsically motivating environments facilitate successful learning. Interpersonal motivations such as cooperation, competition and recognition exist and contribute to the learning process. Cooperative learning was highly successful in the ELISA programme and motivated the students to continue with their journalistic endeavours.

Different cultural values are characteristic of diverse nations and organisations. The critical question *How do we deal with cultural differences?* emphasises these diverse values. Cultural identity involves similarity and differences. Similarity pertains to similar points between people and underlies the differences that they experience. Differences are inscribed in cultural identities and unite people regarding who they really are. My findings correlate with the literature that points out that there is an explicit divide between people from different cultures and traditions. Globalisation causes the world to get smaller, compressed, interconnected and results in a world that is *flat*. Dealing with cultural differences necessitates an understanding and awareness of other cultures. Certain countries attempt to preserve their own unique cultures where nationalism is the decisive factor. Glocalization refers to the process where the local goes global with the focus on local experiences and content. This concept of glocalization opposes the idea of one content and one ideology that dominates the world.

Examples of glocalization are endeavors such as Bollywood films where certain elements of the film are typically Western, a Singaporean public housing program where Western and local motifs are combined to form a new design, and the introduction of Gillette's Sensor Excel shaver for ladies in Japan.

The critical question *Which aspects of the programme work well and why and how can they be improved to compensate for those that did not work well?* emphasises several positive aspects of the programme. These aspects include national ownership, combination of course material, critical thinking skills and dispositions, Internet use, and feedback and motivation (discussed in more detail from page 153 to page 154).

National ownership of the curriculum implies that the students use the opportunity to make the learning material their own. My findings correlate with the literature because the students could use the curriculum. This inspired them to explore additional environmental issues. The combination of course material resulted in a valuable learning experience. My findings bear a resemblance to the literature in this regard in that this method of learning proved to be very successful. The development of critical thinking skills and dispositions was one of the most important objectives of the programme. According to the literature it is also a common objective of various disciplines. The findings of the ELISA programme indicate that critical thinking skills are imperative since the students had to construct their own learning. Critical thinking skills can be fostered to compensate for those aspects that do not work well. The findings of the ELISA programme correlate with a significant body of literature that points out that Internet use can enhance the learning process. The Internet can be used as a tool to achieve various goals and to enable the students to become global partners. Feedback and motivation are regarded as positive aspects that facilitate change. The literature proves that feedback is necessary to encourage full participation. The motivation and feedback in the ELISA programme were excellent and inspired the students to collaborate and use the opportunity for best results.

The critical question *Which aspects did not work well and why and how can they be improved?* pertains to aspects such as the initial agreement with the University of Limpopo, unequal power relations and the dismantling of prejudice. The initial agreement with the University of Limpopo went wrong from the outset. This coincides with the extensive body of literature that reports on the failures of partnerships between developing and developed countries. The University of Limpopo was sceptical and under the impression that UP wanted to impose on them. Unequal power relations and funding are fundamental principles that either result in the success or the failure of partnerships. I found that the ELISA programme shows a resemblance with the literature that reports on failed partnerships. Prejudice proved to be another obstacle. Initially the Stanford representatives doubted whether the programme would be successful in South Africa. The South African skills and expertise, however, surprised the Stanford representatives while the South African representatives wondered whether they should not conduct the programme independently.

Aspects that can be improved involve the establishment of mutual trust between the different role players and team leaders on both sides. Advancing the personal contact between the different teams can contribute to the dismantling of prejudice. Trust that is founded on personal contact can create and increase an atmosphere of successful cooperation. Equality of power relations between the two teams is another aspect that can be improved. This should be addressed in order to ensure that one partner does not have a disproportionate advantage and authority over the other. The dominant role that Stanford played regarding the management of the funding can be reconsidered. When both partners share the responsibility to control the funds a more successful working relationship can be established.

This study used the “ADDIE” model to describe and evaluate the ELISA programme. The ADDIE model comprises five stages namely Analysis, Design, Development, Implementation and Evaluation. Analysis explores the goals of the learning experience, the target population, the media, the time frame, and the cost of the exercise. Design stipulates the curriculum of the intervention and development involves the way in which the course authors compiled the curriculum. Implementation entails the delivery of the product while evaluation specifies whether formative or summative evaluation was done.

3 Discussion

3.1 Methodological reflection

The ELISA project is regarded as a case study that was used to conduct formative research to evaluate and improve the educational design. This educational design is grounded on principles that originated from preceding research. An applied research component formed part of the ELISA programme and evaluation research is a well-known form of applied research.

The study followed a grounded theory approach to inductively generate theory. Apart from the significant body of literature that exists on grounded theory (discussed in Chapter 1, p. 22, and Chapter 3, pp. 39-40), I used specific guide-lines on grounded theory research to conduct the study (Dick, 2005). Grounded theory does not gauge a hypothesis. Since I initially approached the study without a clear pre-defined research agenda, it was felt that grounded theory would be an appropriate approach. The advantage of this method is that it allowed me to be free from initial bias. The disadvantage is that, especially during the early stages of the research, the process tends to be unfocused. My position in this research is that of an outside observer, investigating what happened. From the beginning I grappled with the process of analysis of the data that I had encountered, often puzzled and frustrated by ambiguity. The research aimed to explore the research problem by focusing on the subjective experiences of human beings in social context. Attempts were made to understand the students from within as well as the subjective world of their experiences. This was accomplished by encouraging the students to express their ideas by means of discussions, project documents and the focus-group interview.

I recorded what was happening and did not try to interpret it at that stage. I took notes during all the real-life situations of the programme. The data that I collected include emails between Stanford and TUT. From these emails I identified various different connotations. While taking notes I realised that the emails reflected values such as truth because the outreach project was legitimate and based on facts. Justice and fairness was reflected in the integrity of the role players. Authority, personal power, efficiency and expertise were characteristic of the leading partners who managed various problem-solving aspects in order to reach conformity. The outreach initiative was based on role division that sometimes required rapid decision-making and this took the form of the interchange of short notes. The particular abilities of the team leaders resulted in the selection of the appropriate curriculum for the target group and the succession of telephone conferences and video conferences. Individualism, particular obsessions and an attitude of survival-of-self was apparent among some of the team leaders. Charisma was also characteristic of some of the team members. Performance and enterprise formed part of the teaching assistants' responsibilities because they had to compile the students' reading material and grade the assignments. The first teaching assistant's creativity and innovation resulted in her suggestion of online office hours at times that would suite the students.

The first teaching assistant confirmed that she experienced some personal insecurity due to the fact that particulars regarding the demographic background of the target group were unknown. The first teaching assistant was unsure in the extent of coping with the situation because she was under the impression that the South African mobile technology was far in advance of that in the US. However, the teaching assistants' enthusiasm, commitment and task orientation resulted in a wide variety of reading material being made available to the students. A certain amount of affinity developed between the first teaching assistant and some students. Severe detrimental aspects of the project were the negativity and anger that arose between the TUT leaders and the representatives of the mobile service provider. Stanford's decision to discontinue the project resulted in conflict and disbelief in the South African team.

I then coded my notes and grouped them into categories. The following categories emerged: Business plan, higher education, divides, syllabus, technology, wireless technology, and the Internet. Data also included transcripts of interviews, recordings, observation notes, transcripts of telephone conferences and video conferences and minutes of meetings, and project documents. The latter included assignments, WebCT6 documentation on online chat sessions, individual meanings posted under discussions and official grade reports. The focus-group interview resulted in a significant contribution to the data. I then started to compare the data that I had obtained from the first project documents with that of the remaining data. I selected and divided data systematically into manageable ideas, patterns, trends and correlations (Mouton, 2001). I tried to discern the theory underlying the data. Theory soon emerged and I compared data to theory.

I also identified sub-categories or properties of the information that I obtained from the participants and interviewees. Properties included goal, partnerships, authority, funding, target population, timeline, ownership, resources, increasing student numbers, distance education, availability, affordability, Digital Divide, cultural divide, physical divide, expansion, bridging, lecture outline, deviation, core course content, readings, input, contextualisation, CD-ROMs, language, input, feedback, telephone conferences, video conferences, skype calls, PDAs, sms's, use of wireless technology, South African situation, Stanford situation, availability, cost, ubiquity, service providers, telecommunication, affordability, infrastructures, and literacy.

While I was coding I became aware of certain theoretical propositions. I identified the following propositions: Stanford's business plan for a higher education international outreach initiative was formulated with reference to the objective and specifications of the proposal collaboration. The prescribed syllabus specified the content of the module and emphasised the two-way learning process between the two teams. Different divides exist among all nations and cultures. Technology is used as a tool to facilitate and achieve a variety of goals.

Links between categories occurred as well as central categories or core categories. These links provided the theory for the study. I started making notes which eventually resulted in memos. I grouped the memos and sequenced them to formulate a theory. Eventually I formulated the following theory: cultural divides between team leaders and members of a prestigious Higher Education Institution in the Northern hemisphere and their colleagues at a less prominent Higher Education Institution in the Southern hemisphere exist and influence the outcome of an international outreach programme.

Background reading is an important element of grounded theory. While collecting data I started to read literature on culture, cultural diversity (commonalities and contradictions), cooperation and cooperative learning, partnerships, educational technology, factors contributing to the international Digital Divide, bridging the Digital Divide, the effect of globalisation on education and Higher Education Institutions in South Africa. At first, in this emergent study, it was not obvious which literature sources would be relevant. I kept on reading and accessed relevant literature as part of my data collection. I compared the literature sources to my emerging theory in a similar fashion that I compared the data to my emerging theory (Dick, 2005).

Apparent discrepancies between data from the literature and the emerging theory are always possible in grounded theory research. These discrepancies should be treated appropriately because it does not necessarily prove that the theory is wrong. However, the theory should fit the situation and it should work. The theory should be extended to make sense of the data taken from the literature as well as from the empirical data-collection procedures. I found that the grounded theory research model fitted the ELISA

situation very well because it allowed for all the possible nuances that originated. It addressed all the relevant perspectives of the research.

3.2 Substantive reflection

The results of the ELISA programme are compared to the outcomes of research on comparable topics and areas. These results illustrate a correlation to other knowledge in this area. The ELISA programme provided numerous constructive results. The most important results were the development of human capital via a valuable learning experience, computer-generated documents, critical thinking skills and dispositions, international collaboration, the use of technology, and certification (explained in more detail from page 160 to page 165).

3.2.1 Valuable learning experience

The ELISA students' participation in a wide-ranging and suitable e-learning programme resulted in an exceptional and valuable learning experience. The exposure to the curriculum and national and international expertise raised awareness about environmental issues that the students previously did not have. All the students reported that they had gained from the learning exercise and that it was valuable for journalism students. The outcome of this international outreach programme correlates favourably to a distance education initiative between the University of British Columbia (UBC), Vancouver, Canada and the Monterrey Institute of Technology in Mexico. In 1997 the providing partner UBC developed a set of five ICT courses to Monterrey by integrating technologies such as CD-ROMs, the World Wide Web and videoconferencing. This technology-based distributed learning initiative was extremely successful as most of the students gave good feedback and regarded it as really valuable.

3.2.2 Computer-generated documents

Computer-generated documents provided significant results. All the students (with the exception of one who worked night shift in a demanding temporary editor capacity) completed all five major assignments and two mini-assignments that were included in the requirements of the programme. These assignments entailed 600-word opinion pieces and a 200-word opinion piece respectively. These exercises afforded them the opportunity to analyse the information in the prescribed lectures and readings and then take a position on the matter. Since the students were enrolled as journalism students they had to convince their readers of their opinions, support their arguments with evidence and present their ideas logically. The completion was mandatory in order to comply with the requirements of the programme. The students also had to prepare a 200-word piece reflecting a journalism perspective on any pressing issue relevant to

environmental journalism. The UP guest lecturer facilitated a healthy discussion about the students' contributions on different ecological issues. The second teaching assistant researched academic, professional and conference opportunities for environmental journalists in this regard. The idea was that students could use these assignments to compile and revise a written example to use later to apply for development opportunities.

A comparison with Cronjé's study (2006, p. 277) Pretoria to Khartoum – how we taught an Internet-Supported Masters' programme across national, religious, cultural and linguistic barriers - reveals a commonality with regard to computer-generated documents. In this initiative that was lectured between Pretoria and Khartoum the students produced electronic artefacts such as "essays, term papers, websites, Power Point presentations, Authorware lessons and Excel spreadsheets". I came to the conclusion that similar to the Pretoria – Khartoum initiative, the exposure of the TUT students to the ELISA programme enabled them to produce their own computer-generated documents.

3.2.3 Critical thinking skills and dispositions

The development of critical thinking skills and dispositions was one of the most important results of the ELISA programme (discussed in more detail under Chapter 2, from page 72 to page 73). The students learnt to formulate an unambiguous argument and explain their position with supporting data, gain insight into lectures and readings, demonstrate their command of the material by choosing main points and organise learnt material into a reasoned written contribution, form an opinion on an issue after obtaining information from the prescribed material, convince their readers of their views and present their ideas sensibly. An argument should be comprehensive, logical and based on solid evidence. During one of the contact sessions the Consulting Associate Professor from Stanford facilitated a cooperative learning session. This learning process involved small group discussions during which the students had to analyse information, construct their own understanding of the issues, share their ideas with the members of their group, and give feedback to the rest of the students. This active exchange of ideas increased interest among the students and encouraged critical thinking.

The above study which features the development of critical thinking skills compares favourably with the study "Critical thinking skills and dispositions of baccalaureate nursing students – A conceptual model for evaluation" by Colucciello (1997). She used a sample of 328 baccalaureate nursing students to scrutinize critical thinking skills and dispositions. The study focuses on whether or not there exists a relationship between critical thinking skills and critical thinking dispositions of nursing students and possible differences in critical thinking dispositions between the academic levels of junior and senior nursing students. The study emphasises that nurses had to foster their inductive and deductive interpretations; develop their skills to analyse; constantly re-evaluate new information and adjust to opposing evidence. The findings indicated that with regard to critical thinking skills, there exists a considerable difference

among nursing students of different levels. Critical thinking skills clearly developed among the ELISA students as they were required to access lectures and transfer the knowledge to their own creative writing. They were, however, not subjected to the development of different levels of critical thinking skills.

3.2.4 International collaboration

International collaboration and cooperation resulted in the sharing of knowledge and the enhancement of the learning experience for the ELISA students. The purpose of the collaboration between Stanford and the South African teams was to introduce an existing Stanford international security course to a South African HEI. The International Environmental Politics programme focused on universal environmental themes and identified problems and potential future problems and perverse outcomes. The course author introduced the students to five fundamental viewpoints from which to understand environmental problems of international importance. The Consulting Associate Professor from Stanford emphasised environmental sustainability and focused on the impact of drastically increasing populations on global resources. She compared a Honduras family with a Kenyan family and highlighted the equity of people on the planet who are living in very different circumstances. The guest lecturer from UP accentuated transnational biodiversity protection and the benefit of peace parks for South Africa. The students were exposed to the expertise of world famous international environmentalists and had the opportunity to make the learning material their own thus furnishing substance to the phenomenon of national ownership of the material.

The findings of the ELISA programme correlate with the contribution of the African Studies Association (Samoff & Carrol, 2002) which received a grant from the Rockefeller Foundation to address Africa's higher education situation. International collaboration and cooperation often result in partnerships which emphasise national ownership or "country-led development" (Samoff & Carrol, 2002, p. 43). Their findings indicate that one of the underlying principles is that the formulation of the direction for growth in Africa is Africa's responsibility. Similarly one of the underlying principles of the ELISA project is that the formulation of a policy to ensure environmental sustainability is the responsibility of role players in both the Northern and Southern hemispheres.

3.2.5 The use of technology

The exploration and use of technology resulted in the enhancement of the students' digital skills. The students used technology as a tool to accomplish a variety of tasks. These tasks included seeking information, integration of new and existing information and communication. The students used the Internet to research their assignments, collect significant information and integrate and synchronise new

and existing information. WebCT6 afforded the students the opportunity to acquaint themselves with the learning management system. Although the majority of the students reported that the use of WebCT6 caused problems, all the students used it to participate in the programme. The decision to incorporate a mobile communication component in the programme led to the introduction of the PDAs. This use of technologies correlates with the mission of TUT to “extend the parameters of technological innovation by making knowledge useful through focused applied research and development” (Tshwane University of Technology, 2005). The video conferences resulted in the participation of the students in interactive learning processes.

The above findings on the ELISA programme correlate with the use of technology as reported by Cronjé (2006) in the Pretoria to Khartoum study. Three Professors from UP taught a Master’s degree programme at the Sudan University of Science and Technology in Sudan. The presentation mode involved Internet-supported distance education and contact sessions. The students received six months of computer literacy training to enhance their digital skills. The results of the ELISA programme can also be linked to the study ICT- Transforming the world by transforming universities which was conducted by the Swedish International Development Cooperation Agency (SIDA) in 2002 in Mozambique (Issakson, 2002). This study focused on the connection of universities in developing countries to the Internet in order to support ICT training and digital skills. The study found that there is a significant discrepancy between the management and the deployment of technology in one of the world’s poorest countries. Venancio Massingue, Vice Rector of UEM, Mozambique indicated that there is an urgent need to master technology (Issakson, 2002). This is of vital importance in the development of digital skills of university students. Likewise the ELISA students needed more technological training and the development of digital skills as clearly indicated in the focus-group interview.

3.2.6 Certification

One of the most important results of the ELISA study is the completion of the programme. Fourteen of the fifteen students completed the programme in fulfilment of the requirements to obtain their qualifications and work as journalists. The programme was completed on schedule after eighteen weeks and the students received certificates issued by both Stanford and TUT on 18 August 2006. The programme had a 93% completion rate. Two of the TUT students had already enquired about further studies abroad, particularly at Stanford. They expressed the wish to enroll at Stanford as the programme opened new study possibilities for them. These findings correlate well with the findings of Cronjé (2006) in the Pretoria to Khartoum study where the study was completed within 18 months with a 100% completion rate. Despite the successful 93% completion rate of the pilot phase of the ELISA programme, the potential of shared goals between the two teams was not realised. Mutual trust failed and the programme was discontinued after the first year.

3.3 Scientific reflection

This research contributed to the scientific body of knowledge in various ways. The scientific reflection emphasises what is gained through this study with respect to the product, the process and the methodology. With respect to the product as designed it is noteworthy that research projects as components of partnerships often bear the unmistakable imprint of the role players that commission it. Initially Stanford wanted to introduce an existing international security course to a South African HEI. Stanford first offered this same course in Russia in 2000 to nine HEIs. However, after careful deliberation the South African team insisted on the inclusion of two lectures on South African content. Stanford realised that they could not impose a foreign degree on the South African students and agreed to the contextualisation of the content of the curriculum. Cultural influences regarding the compilation of a curriculum are important and a foreign course should be culturally and pedagogically relevant. This resulted in the decision to omit some of the original nineteen lectures and to select fifteen lectures for the programme, representing some South African content.

I regard the opportunity of curricular innovation as one of the main attributes of the project. The partial contextualization of the curriculum was one of the outstanding features that involved dedicated experts to participate. It is this expertise and commitment that enriches the project and augments it to a superior product that can enable a two-way learning process. Yet Stanford later objected to this development. A better understanding and exploration of the ELISA curricular innovation can contribute to the successful design of other outreach initiatives in cross-cultural contexts.

The scientific reflection regarding what is learnt with respect to the process focuses on the modus operandi that was followed. Interestingly enough is the fact that the process originated as a result of personal contact between two delegates who realised the potential of a North-South outreach initiative. Ironically the project was discontinued because of insufficient mutual trust and shared goals between the team leaders on both sides. This accentuates the importance of continuous personal contact between role players. The multiple divides separating the members of the two teams had a significant influence on the process. Increased personal contact between the partners could lead to trust and confidence. This was confirmed by the second teaching assistant who admitted that the huge distance between the partners was a real challenge. The design and selection of appropriate reading material proved to be particularly complicated. The selection and demographic particulars of the target group was another unknown factor that caused ambiguity. The project lacked a dedicated outreach coordinator who could gain first-hand knowledge and understanding of progress and problems on both partnering institutions. Reconsideration and anticipation of the course of action that should be taken could add to the refinement of the process.

The research that was done in the ELISA programme contributed significantly to the scientific body of knowledge regarding the methodology that has to be followed. The ELISA programme is an example of a

case study that used grounded-theory as a research approach because the theory gradually emerged and did not gauge a hypothesis. However, the project should have been designed and developed as a design experiment. This would enable the designers and developers to reassess the progress and outcome of the pilot phase and also to reconsider and amend the curriculum for the second and third years. The fact that the project was discontinued after the pilot phase indicated limitations that could otherwise have been avoided.

4 Recommendations

Recommendations pertaining to the question *What dialogue emerges and why does it emerge?* involve the following:

More care should be taken to dismantle prejudice and to create an atmosphere of mutual trust between team leaders and members on both sides. From the outset it should be agreed that the modus operandi is that of shared decision making. It should also be agreed that this should continue right through the project in order to prevent one partner (in this case the providing partner Stanford) from unilaterally and without any explicit reasons deciding to discontinue the project. Shared decision making should also be carefully monitored and upheld. It should enable the receiving partner (in this case TUT) to react and comment on the perceived problems that lead to the breach in trust. The receiving partner should be in position to review the course of the project, recommend restructuring in order to refine and enhance the project. The outcome of the pilot phase should enable both partners to suggest fine-tuning and improve the academic design and development. Equal power relations should be established and endorsed to ensure that each partner may lay claim to the same rights in the outreach initiative. The funding partner should not be the service provider too as this precludes the process of shared decision making.

The academic design and implementation of the project should be cautiously reviewed. This should enable the teaching assistants and other role players to provide more feedback to the team leaders on both sides. Close collaboration should contribute to a clear understanding of the pedagogical problem and result in curricular innovation. The pilot phase should be designed to include more than one iteration so that it could be a prototype of an intervention that increasingly attempts to meet the original goals and prerequisites. The current two semesters during which the pilot phase was conducted should be lengthened to three or four semesters in order to allow the students to make the most of it. Successive approximation should be incorporated to improve the design and implementation. The initial time frame of three years should be adhered to. Partial contextualisation of the curriculum should be incorporated.

The question *How and why is shared meaning created?* leads to the following recommendations:

More commitment and engagement of the role players should be fostered in order to obtain clarity on expectations, common purposes and common incentives. Sufficient commonality regarding the need to continue and the mutual will to cooperate should be generated. Fundamental mutual goals on both sides as well as individual goals should be promoted in order to create shared meaning.

The question *How do we deal with cultural differences?* conveyed the following recommendations: The team leaders and members should foster an awareness of the other versus the own identity. An understanding of the traditions of cultural differences of fellow citizens should be promoted. The role players should encourage contact between people from different cultural backgrounds and cultivate tolerance and acceptance for other viewpoints. The team leaders should strive toward a mutual understanding of cultural differences between the management on both sides to ensure a successful outreach initiative.

The question *Which aspects of the process work well and why and how can they be improved to compensate for those that do not work well?* contributed to the following recommendations: The selection of themes for future outreach initiatives should be characteristic of a partially contextualized curriculum. All the ELISA students agreed that the curriculum was excellent and particularly beneficial to all environmental journalists. National ownership of the learning material should be agreed upon because it enabled the students to put the new insights and awareness that they obtained to good use. The students should be encouraged to build on their achievements and explore more educational opportunities. Critical thinking skills and dispositions should be increasingly fostered by means of follow-up courses.

Recommendations that pertain to the question *Which aspects do not work well, and why?* comprise the following: The duration of the pilot project should be prolonged. The workload together with the time span, should receive careful attention. The time span of the programme is relevant to the workload which should be spread out evenly over three or four semesters in order to allow the students to read all prescribed material, listen to all the lectures on the CD-ROMs and to research the prescribed topics. The students should be able to complete all the assignments within the allowed time. An appropriate schedule should be placed on WebCT6 at the beginning of the academic year, specifying all the assignments and submission dates in advance. This should allow the students adequate time to access all the prescribed material and research the topics accordingly. The submission specifications should be re-scheduled from Friday night at 24.00 to a more accommodating time, preferably to Sunday night at 24.00. This should allow the students enough time to complete their assignments.

Internet access and connectivity should be expanded on campus, in libraries and hostels to facilitate the learning process. Broadband access should be available to enable the students to go online when necessary. Fast Internet connectivity should allow the students to successfully logon to WebCT6 to

access their learning material. The students should receive more comprehensive training in WebCT6. The initial introductory face-to-face contact session should be re-evaluated and subsequent hands-on training sessions should be organised during the first semester. Digital skills to effectively operate the PDAs should be developed. The PDAs should be used more effectively. The students should receive more hands-on training in mobile technology to improve their digital skills. The minimum period of 13 weeks to get acquainted to the PDA technology should be extended to 26 – 30 weeks. Every student should have a basic knowledge of PDA technology in order to perform the basic tasks and assignments involved. Weekly or two-weekly face-to-face contact sessions in order to monitor the students' progress and to maximise the use of wireless technology for academic and research purposes should be explored.

Recommendations for further research involve the following: The exploration of possible differences of opinion and undercurrents among project leaders throughout the project, the investigation of the role of power relations between international partners that are funded by international grants, the effect of these power relations on the learning experiences of the students involved, and the effect of the contextualization of the learning material on the success of the project.