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Facilitating the Development of Self-Directed Learning Skills in Information Systems Students

Susan Ann Benvenuti

A research report submitted to the Wits School of Education, Faculty of Humanities, University of the Witwatersrand in partial fulfilment of the requirements for the Degree of Master of Education by combination of coursework and research.

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ABSTRACT

Accelerating technological and social innovation drives the need for graduates ready for self-directed lifelong learning. Self-directed learning (SDL) projects are now an integral part of many formal undergraduate programs across the disciplines.

A Personal Development Portfolio (PDP) based on Grow's Iterative Staged Self-directed Learning Model was introduced into a second year Information Systems course to raise awareness of the need for SDL and enable students to drive their own learning. The study evaluates the success of the PDP in preparing graduates as self-directed lifelong learners. Students' reflective writing and learning journals, together with submitted portfolio work was taken as evidence of success and difficulties.

Resistance often accompanies the changes introduced by SDL. This research therefore also explores the potential for business change management principles in mediating change to the educational environment.

Student engagement with SDL was found to be accomplished with mixed success; most students demonstrated initial resistance, while many developed into focused reflective learners over time. While students were able to define appropriate learning goals and reflect on progress and achievement, mixed ability in specifying resources, strategies and validation to support their learning was found. Creating change readiness through messaging, cooperative SDL and using adapted change management models were of use in refining the SDL process.

KEYWORDS: Self-directed Learning, Lifelong Learning, Personal Development Portfolios, Reflective Writing, Learning Journals, Change Management.

DECLARATION

I declare that this research report is my own unaided work. It is being submitted for the degree of Master of Education at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at any other University.

_____

Susan Ann Benvenuti
February 2012

DEDICATION

To my beloved Marco, Sabrina and Richard thank you for all your love, patience, understanding and support – you're wonderful and I adore you!

And to my parents for their on-going love, sacrifice and support for my education, growth and development – I hope to always do you proud.

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List of Accronyms

IS – Information Systems

IT – Information Technology

LC – Learning Contract

LJ – Learning Journal (requirement for PDP)

LLL – Lifelong Learning

PDP – Personal Development Portfolio

PF – Portfolio (PF1, PF2, PF3 - submissions for PDP)

RR – Reflective Review (RR1, RR2, RR3 - part of PDP portfolio submissions)

SDL – Self-directed Learning, Self-directed Learners

SDLC – Systems Development Life-cycle

SDLLL – Self-directed Lifelong Learner

SDLRS – Self-directed Learning Readiness Scale

SSDL – Staged Self-directed Learning Model

Chapter 1: Introduction

1.1 Introduction

Information Systems (IS), a relatively youthful, complex and dynamic applied discipline, grows and changes its knowledge domain almost as rapidly as its underlying, enabling technology. This creates challenges for industry and academia alike in terms of managing the on-going demands and needs relating to changing knowledge, skills, values and attitudes of the discipline. For organizations and practitioners the need is for effective lifelong (career-long) learning coupled with a tolerance for on-going change; for academics the challenge relates to curriculum design in terms of both content and approach, as the education process needs to shape future practitioners for both immediate and long term career success.

This situation is neither new nor restricted to the discipline of IS. As far back as 1975, Knowles suggested that "rapid change will be the only stable characteristic" of the future, and that education would have to redefine its focus to "develop(ing) the skills of enquiry" (p 15). Carl Rogers, too, argued nearly three decades ago, "We are in my view faced with an entirely new situation in education where the goal of education, if we are to survive, is the *facilitation of change and learning*" (Rogers, 1983).

A study undertaken at University of California, Berkley by Lyman and Varian (2003) estimated that new stored information almost doubled between 1999 and 2002. They further estimated that the amount of new information produced in 2002 on all media types was approximately five exabytes (roughly equivalent to 37000 new libraries each the size of the Library of Congress' book collection of 17 million books). With the half-life of knowledge of many professions being variously estimated at between two and twelve years (Wulf & Fisher, 2002; Livneh, 1988; Frandson, 1980; Dublin, 1972), countless studies in the health sciences, education, law and engineering all attest to the need to develop the capacity for self-directed lifelong learning in future professionals.

To respond to the above perceived needs, a Personal Development Portfolio (PDP) was incorporated into a second year systems analysis course as part of the students' systems development project. The PDP was designed to raise awareness

amongst students of the "real world" need for on-going self-development based on individual skill and knowledge requirements, and to provide them with the opportunity to direct their own specific focused learning within the context of the more traditional guided learning taking place around systems analysis and a team project. The design and structure of the PDP is introduced in section 1.5 below, and then discussed in detail in section 2.3.2.

This research project evaluates the design and implementation of the PDP curriculum intervention in terms of its ability to respond to the challenge of preparing graduates as willing and able self-directed, lifelong learners.

This chapter introduces the research project, specifying the research problem, purpose and questions arising out of the design and implementation of the PDP as a response to the above challenges. The background to the research context is then outlined and a description of the PDP intervention given. Finally, a brief discussion of the research design used in this research project is introduced identifying the overall approach adopted and methods used.

1.2 Research Problem

A constantly evolving discipline driven by rapid and relentless technological change, together with a broad spectrum of jobs, roles and career paths in the industry, creates curriculum challenges for Information Systems academics and suggests that successful IS practitioners must be, of necessity, self-directed lifelong learners (SDLLL). Responding to the need to facilitate the appreciation for and development of SDLLL "ability" in IS graduates, a Personal Development Portfolio (PDP) was included as part of the systems analysis project in a second year IS course.

The PDP was envisaged as a means by which to provide students with the opportunity to engage in self-directed learning in a context in which they were able to recognize learning needs and respond to these on an individual basis. However, when first introduced, students reacted to the demands of the PDP in ways typical to those associated with major change in organizational or personal settings. Reactions such as anxiety, rejection and rebellion came across in their questions and comments to each other, and surfaced in their early learning journal entries. This threatened to compromise student learning. Long (1994, p 13) acknowledges that the introduction of SDL constitutes change and identifies "fear of the unknown" and "reasonable satisfaction with the status quo" as potential sources of resistance.

Organisations acknowledge the need to manage and mediate the effects on organisations and individuals caused by major change. A large body of knowledge and research relating to Change Management and Organisational Development proposes principles, theories and practices by which to ensure that any change impacting an organisation, whether incidental or by design, is controlled and managed in order to ensure a positive outcome for the organisation and all stakeholders.

Theory and frameworks exist in the literature relating to lifelong learning and self-directed learning and the design of curriculum interventions to facilitate development of these values and abilities in students. Long (1994, p17) provides a review of the literature relating to counteracting resistance to SDL and comments that the research seems to address either a "level of acceptance combined with a lack of ability or knowledge of how to engage in SDL" or "some kind of active resistance". Strategies for the former focused on fostering, enhancing or strengthening SDL (such as Brockett and Hiemstra, 1991; Candy, 1991; Grow, 1991; Hiemstra and Sisco, 1990; Lowry, 1989; and others), while two references to resistance to change are made in response to the latter. No evidence of use of established change management principles or guiding frameworks for dealing with resistance to change at the learner level is apparent. The research problem is therefore conceptualised around exploring how to design and implement the PDP in such a way as to both facilitate the development of SDL in students in support of LLL while at the same time drawing on established change management and organisation development frameworks to manage and guide the resulting educational change.

1.3 Purpose Statement

The purpose of this research is twofold; firstly it aims to evaluate a specific self-directed learning intervention, in terms of the opportunity it provides young adult learners to develop the skills, attributes and values required to succeed as self-directed lifelong learners. Secondly, the study will examine the potential relevance and contribution that adapted change management and organisational development theories and frameworks can make towards mediating the change introduced into this educational environment.

1.4 Research Questions

As the literature underpinning the two different aspects of the research are drawn from two distinctly different disciplines or fields, with underlying differences in research traditions, etc., the two parts of the study are undertaken separately, guided by the following two main research questions:

1. In what ways does the Personal Development Portfolio (PDP) provide students with exposure to, and learning opportunities through which to develop self-directed learning skills, attributes and values?
2. What contribution can the application of change management and organisational development principles, theories and frameworks make towards mediating the change inherent in the previously unfamiliar pedagogical approach of Self-Directed Learning, thereby facilitating student adaptation and success?

These questions in turn were examined through the definition of research sub-questions as follows:

Question 1:

a. What is the perceived value and importance of self-directed learning to the student participants as it relates to their future careers?
b. What, if any, learning opportunities did the PDP provide for developing skills necessary for successful SDL?
c. What evidence if any of development of these skills emerged over the course of the PDP?
d. What indication if any of the values and attributes necessary for successful SDL was observed in student participant behaviour or expressions in completing the PDP?
e. What aspects of the PDP encouraged the emergence or development of these values and attributes?
f. What perceived benefits did students identify as arising from participation in the PDP?
g. To what did they attribute these benefits?

Question 2:

a. What concerns and fears did students experience when encountering SDL initially and as they progressed through the PDP?
b. What aspects of the PDP did the students find most difficult or challenging?

c. In what ways did individual students react to or experience change relating to the introduction of the unfamiliar SDL approach?
d. What aspects of the process or structure of the PDP supported student progression and successful completion?
e. What aspects of student difficulty could have been limited by implementing change management principles?
f. What aspects of structure or process in the PDP could benefit from the application of change management principles or techniques?

1.5 Background and Context of the Research

The PDP under examination in this research forms part of a second year information systems course that is one of two semester courses that constitute the second year of study for a BCom student majoring in IS at the University of the Witwatersrand (Wits).

In common with many local and international curricula, the second year of study in IS at Wits has a strong focus on systems development seeking to expose students to the knowledge, skills and stakeholder roles associated with the entire systems development lifecycle (SDLC), from the initial business problem or opportunity through to the point of delivery of a working information system. Assessment of systems development almost always involves the use of team based projects which require students to undertake a systems development project that encompasses the entire SDLC.

The PDP was designed to fit into the overall assessment strategy of the first semester course in IS II. In order to expose students to the idea and practice of self-directed lifelong learning it was necessary to choose an area in which students could work independently to identify appropriate learning needs and work towards meeting these, but at the same time ensure that the learning of more technical core knowledge wasn't compromised.

The PDP was therefore designed to focus on the area of stakeholder roles in the SDLC and more specifically on the knowledge, skills and values required by the various stakeholders. Using real job advertisements and additional research, students explored the roles of the various stakeholders and created profiles of industry expectations for these roles. Thereafter they were asked to identify and focus on achieving two or three chosen learning goals independently over the

course of the semester. Their choice of goals should be informed by their investigations into these IS development roles, together with perceived developmental needs relating to their chosen future role. In this way, the PDP was designed with the goal of providing students with exposure to SDL in a meaningful but focused area, but outside of core disciplinary knowledge where issues of selection, sequence and progression (Muller, 2006a and b) are vital in ensuring coherence in the curriculum.

This research project examines one cohort of second year students undertaking the course during 2010. It uses an analysis of both the design and implementation of the PDP against principles, guidelines and frameworks drawn or adapted from the appropriate literature, together with data from the student submissions to provide a detailed examination of the PDP in terms of the research questions posed.

1.6 Research Design

1.6.1 Overall Approach

Conceptualised as an evaluative case study (Bassey, 1999), this research project is empirically based, and is organised around the collection, analysis and interpretation of data relating to a specific cohort of students undertaking a SDL based learning intervention, the PDP, in order to draw some fair and meaningful conclusions. The case study is thus largely intrinsic in nature (Stake, 1995) as the overall interest lies in evaluating the PDP in terms of the opportunity it creates for students to develop the capacity for SDL.

The research was operationalized under two main research questions which are largely individually treated. Taken at this level, the second question, relating to the use of change management and organisational development theory in mediating educational change, introduces both an exploratory (Bassey, 1999) and instrumental (Stake, 1995) aspect to the overall case study.

1.6.2 Methodology

The research project was conceptualised as having two interconnected and interdependent but distinct parts. Each part was guided by one of the two main research questions, and examined through the sub-questions relating to that question as detailed previously.

Various sources of data were used including student requirements and assessment criteria for the PDP, student PDP submissions including learning contracts, reflective writing, portfolios of evidence and journals, together with student questionnaires and researcher notes and reflections.

1.6.3 Sample, Data Analysis, Presentation and Discussion

The study used a sample of eight students drawn from a cohort of 48 in total. The selection of the sample was purposive, drawing on guidelines to ensure representation across the group as well as varied and rich data. Issues such as gender, prior educational background and socio-economic circumstances were not taken into account when constructing the sample as these were not included in the scope of this research project.

The data analysis and presentation of findings for the two main research questions is done in two steps. Firstly, the eight individual journeys of the students making up the sample are constructed from each student's reflective writings, journals and portfolios, and presented in order to portray the variety of experiences that students had in undertaking the PDP. Thereafter a second analysis looks across the students' journeys to establish commonality or divergence of experience, and to surface interesting or important results relating to the research questions and sub-questions of this study.

Data was analysed against guiding frameworks and literature sources, desired outcomes and objectives, from the point of view of student perceptions and in light of the researcher's personal reflections.

Chapter 3 of this report provides a detailed description of and rationale for the research design and the approach taken in this project.

1.7 Rationale and Significance of the Study

This study was undertaken in response to a deeply held conviction that IS students need both to be exposed to the concept and necessity of self-directed lifelong learning, as well as given the opportunity to develop some of the related skills in an appropriate environment. I conceptualised and designed the PDP to both provide exposure to and opportunity for engagement with SDL.

As the lecturer responsible for the initial conceptualisation, design and implementation of the PDP, I felt that a carefully conceived and structured research project was necessary in order to systematically examine and evaluate the PDP in terms of the opportunity it provides young adult learners to develop the skills, attributes and values required to succeed as self-directed lifelong learners.

Furthermore, my initial experience with the PDP in 2009 highlighted the need to consider the impact that the PDP had on changing students' learning environments in order to ensure that resistance to change did not compromise the desired benefits. The SDL literature (Long, 1994) hinted at an idea that had struck me relating to students' early interactions and responses, and it became apparent that a further detailed examination of the PDP was appropriate in order to explore using change management principles and theory to support the fine tuning of the implementation and design of the PDP.

Through this project I aim to contribute towards the work being undertaken across many disciplines in formal undergraduate and postgraduate study towards preparing students for on-going self-directed study in the course of their careers and lifetimes. Furthermore, as illustrated earlier, little research in SDL, curriculum change, curriculum development or educational change in the classroom, looks to established change management and organisational development theories and practices to provide a coherent overall approach to managing this type of change in terms of the learners. This research will contribute towards an awareness of as well as demonstrate the potential value that change management and organisational development have in mediating change in educational settings.

1.8 Outline of Research Report

The remainder of the report is structured as follows:

1.8.1 Chapter 2: Literature Review

Based on the nature of the research questions, the literature review is organised around two distinct areas; research relating to SDL and specifically its incorporation into formal educational settings, and secondly, literature relating to change management and organizational development.

I begin by presenting the origins, concepts and principles of lifelong and SDL, following this with an examination of the integration of SDL into formal higher

education together with frameworks for guiding the development of SDL. Resistance, student difficulties and other challenges are considered. Thereafter I describe the conception, design and implementation of the PDP in light of the literature presented.

In the second part I focus on change management and organizational development with the objective of understanding and conceptualizing the potential impact of the introduction of SDL into students' learning environments. Following a conceptual overview of change and change management, I present literature relating to resistance to SDL and responses to this resistance. Thereafter I review some widely accepted frameworks in terms of their potential for use or adaptation in mediating change in the educational environment.

1.8.2 Chapter 3: Research Design and Methodology

The purpose of this chapter of the research report is to provide a detailed description, explanation and defence of the approach and methodology used in this research project.

I identify and describe the guiding methodology for this study, an evaluative case study, and describe the process of the selection, collection, analysis and presentation of primary data, justifying the choices I made in each case. This entails a discussion on issues of quality and credibility in qualitative research and the presentation of a structure used to guide this research. In particular I present the analysis of the sampling process in order to demonstrate how and why particular students were selected for the study.

Issues relating to limitations of the study as well as ethical considerations impacting on the study are also discussed.

1.8.3 Chapter 4: Student Journeys in Self-directed Learning

This chapter presents the first layer of the analysis and discussion for this study and begins with a brief sketch of the overall achievement of the class in the three parts of the portfolio together with the marks they received in their final course exam. Thereafter I present a series of narratives that portray the SDL journeys of each of the eight students in the sample as they complete the PDP over the course of a semester.

In narrating each student's story, I draw on their personal reflections as expressed in their reflective writing pieces, together with their learning journals. I also

examined their submitted portfolio work in tracing their journeys, for evidence of their successes and difficulties.

1.8.4 Chapter 5: Presentation and Discussion of Research Findings

While the individual narratives presented in chapter 4 each represent a unique and specific engagement with the PDP across a representative sample of this cohort of students, a second layer of analysis across the sample was necessary in order to examine particular aspects of the PDP experience more generally and broadly.

Reading and analysing the stories individually as well as collectively as a case, I return to the two main research questions of this study in chapter 5, in order to explore each in turn using the defined sub-questions as guidance. In approaching this second layer of analysis, I emphasise an evaluative approach in the case of the first research question and a more exploratory approach when considering the second aspect of the research project.

1.8.5 Chapter 6: Reflection, Discussion and Conclusion

In this final chapter of the report I draw together the findings and discussions presented in both chapters 4 and 5, and reflect on them in light of the research questions posed in this study and researcher observations. I briefly discuss the way forward for the design and implementation of the PDP for future cohorts of students, identify contributions made by this study, and acknowledge and discuss limitations.

In keeping with Rule and John's (2011) suggestion, I also look at questions and avenues that have been opened for me by this case study, and identify routes forward in continuing this research further.

1.8.6 Appendix A: Quantitative Data Set

Appendix A contains sets of quantitative data that were constructed in order to support desired research approaches, such as purposeful sampling. The data is not used to any great extent in the actual analysis in this study.

1.8.7 Appendix B: PDP Documents

Appendix B contains copies of the PDP documents given to students to guide their SDL journey. The documents include Portfolio 1, 2 and 3 Requirements Documents

(PF1r, PF2r, PF3r) which specify what students need to do, and a Learning and Development Contract Template (LCtmp), which gives students a structure and example of what is required for their personal development plan. Portfolio 1, 2 and 3 Feedback and Assessment Documents (PF1f, PF2f, PF3f) are also included and these specify the criteria against which the portfolio submissions are assessed. A further document given to the students prior to completing the last portfolio, "Updates and Feedback from PF1 and PF2" (PF1&2uf), highlights some important aspects of portfolio 3 to consider. The last set of documents (PF1q, PF2q, PF3q) are given to students to both guide their submissions in terms of completeness, as well as to allow them to self-report feelings relating to certain aspects of the PDP at that point in time.

These documents are used as a source of data in examining some of the research sub-questions, and are referred to throughout this report by the codes shown above.

1.8.8 Appendix C: Ethics Documents

This appendix contains a copy of the participant consent form used to obtain informed consent to participation in this study from the students. The full set of consent forms is available, and kept securely with the original student data for the study.

Proof of ethics clearance from the university ethics committee is also included in appendix C.

Chapter 2: Literature Review

2.1 Introduction

As the IS discipline continues to grow in scope, so too does the challenge to IS educators. Maier, Clark and Remington (1998) explored changes in the IS job market over a period of fifteen years and found a growing diversity in IS roles and careers, with IS practitioners often expected to perform several of these roles during the course of their career, all of which have different requirements in terms of knowledge and skills. The workplace of IS and IT professionals has changed in terms of its structure, worker location, type and nature of work and the way it is done, and the communication tools used (Lynch, 2004). Traditional work based on "routine processes, individual tasks and isolated work" is being replaced by work characterized by "mobility, technology supported, group and individual projects" (Kaplan, Docherty and Fitzpatrick, as cited in Lynch, 2004). In addition, the project work performed in the IS industry is frequently of a type requiring IS professionals to constantly adapt to and learn about new situations and new industries, depending on the requirements of each new project.

Industry demands for students who not only have the 'required' knowledge but also the relevant skills create tension in the debate as to what balance is required between knowledge and skills, and the on-going debate relating to an academic education versus a fit-for-work training. Kim, Shim and Yoon (as cited in Noll & Wilkins, 2002), report that practitioners and educators perceive the relative importance of key IS issues differently. Achieving a balance between IS fundamentals, and current trends and fads is a major dilemma in IS curriculum design according to Lightfoot (as cited in Noll & Wilkins, 2002). McMurtrey, Downey, Zeltmann and Friedman (2008) confirmed previous findings that while IT professionals consider both technical and non-technical skills to be important for entry-level personnel, that the non-technical soft-skills for example team work, time management and communication skills, are especially important for all IT positions, particularly for future learning and career advancement.

The above debates notwithstanding, agreement on the need for IS graduates to be competent self-directed lifelong learners seems to be gaining ground. McMurtrey et

al. (2008), Parkinson(1999), Lynch (2004) and others, all suggest that universities have a responsibility to ensure that new graduates are prepared from the start of their careers with skills that will allow success in the continually changing IT industry, while Ross and Ruhleder (as cited in Turner, 2004) suggest that IS curricula should instil a sensitivity to change in social and organisational settings, and develop the ability to self-learn in an environment of rapid technological change.

In this research project I examine and evaluate a SDL intervention (a Personal Development Portfolio or PDP) which was introduced into the IS2 curriculum in response to the above stated needs. In particular, I am interested in evaluating the opportunity it provides learners to develop the skills, attributes and values required to succeed as self-directed lifelong learners. In addition, I explore the potential relevance and contribution that adapted change management and organisational development theories and frameworks can make towards mediating the change introduced by the PDP into the learning environment.

In order to inform the two aspects of this research project, this review of the literature is organized around two distinct areas; research relating to SDL and specifically its incorporation into formal educational settings, and secondly, literature relating to change management and organizational development.

I begin by presenting a brief look at the origins, concepts and principles of lifelong and SDL, and how these have come to be defined. I then go on to explore the integration of SDL into various disciplines as part of formal higher education qualifications, and consider frameworks guiding the development of SDL. Problems such as resistance, student difficulties and other challenges are then considered. Thereafter I introduce a detailed description of the PDP describing the way in which it was conceived, designed and implemented in relation to the relevant literature.

In the second part of the literature review I focus on change management and organizational development with the objective of understanding and conceptualizing the potential impact of the introduction of SDL focused learning activities on students' learning environments. After presenting a conceptual overview of change and change management, I present a review of some widely accepted frameworks in order to identify their potential for use or adaptation in mediating change for the learner in the face of curriculum change with some reference to their usage in other facets of change management in higher education. Finally I discuss the selection,

adaptation and application of selected change management and organizational development principles and frameworks to the design and implementation of the PDP.

2.2 Self-directed and Lifelong Learning – Concepts, Principles, Applications and Challenges

In common with the medical, engineering, legal and educational fields, amongst others, IS education is starting to recognise both the truth and urgency of the following statement:

> Short of a nuclear catastrophe, the growth of knowledge is not going to diminish enough to permit men and women to go confidently throughout their careers with the degree of mastery attained at the time of their professional certification; they will always need to continue to learn (Houle, 1992, p 224).

This view is shared by many others including Dublin (as cited in Livneh, 1988: p 149), who estimated that rapid growth in technology and knowledge would render professionals in many fields only "half as competent as they were at graduation to meet the demands of their profession" ten to twelve years later. Frandson suggested that in some professions the 'half-life' of its knowledge might be as short as two to three years (as cited in Livneh, 1988).

2.2.1 Lifelong Learning

Lifelong learning as a formalised concept traces its roots back to Edgar Faure's UNESCO document "Learning to Be" (Faure (ed.), 1972). In common with Dewey (1916), Faure viewed education, democracy and self-actualization as interlinked concepts and "believed that provision of lifelong educational opportunities is essential for the realization of human potential and the spread of human rights and democratic ideals" (Kirby, Knapper, Lamon and Egnatoff, 2010, p 292).

While I subscribe to these ideals from a personal teaching philosophy, in this research I focus on the narrower application of lifelong learning to on-going career or continuing professional development.

Over the last century, initial education, preparation and gatekeeping for entry into the various professions have become a shared responsibility of universities and professional bodies. Driven by calls and attacks from both within and without the

professions over the last few decades, accreditation standards for the majority of professions now include both the requirement for continuing professional education and that graduates entering the professions have been prepared to undertake lifelong learning (Houle, Cyphert and Boggs, 1987).

Candy, Crebert and O'Leary (1994) and Knapper and Cropley (2000) support this view and propose that all students in higher education should be supported in learning how to learn.

Additional support for lifelong learning can be found as educational policy around the world. UNESCO has an Institute for Lifelong Learning (UIL) and published "Learning to be" (1972) which together with the OECD's "Recurrent Education: a Strategy for Lifelong Learning" (1973) began the move towards formal policies. These were later followed by the 1996 UNESCO "Delors" report *"Learning: the Treasure Within"* and the OECD report *"Lifelong learning for All"* (1996). The European Commission has published various documents and policies on lifelong learning (2001, 2001, 2004, 2005, 2006, 2008), as has the European Economic Area Consultative Committee (2008) and the European Union (2008). Details for these reports are contained in the list of references. Many countries around the world have included lifelong learning in their education policies, including South Africa. Both Walters (1999) and Aitchson (2004) look at LLL in South Africa in terms of social redress and the potential for the upliftment of previously disadvantaged adults.

2.2.2 Self-directed Learning

"Self-Directed Learning is that process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing learning strategies, and evaluating learning outcomes" (Knowles, 1975).

The term "self-directed learning" however is used variously to describe two distinct aspects of SDL; the first aspect relates to self-direction in terms of an approach, method or process, while the second aspect refers to self-direction as a characteristic, goal, product or outcome in terms of a learner's orientation. In addition, although suggestions are often made in this regard, very little evidence exists in terms of the relationship between the process of SDL and the goal (Candy, 1991; Brockett & Hiemstra, 1991; and others). Candy (1991) views the process of

SDL as consisting of two aspects; learner-control (self-direction) in an instructional situation as distinct from autodidaxy in a self-instructional situation. He also recognizes two aspects in the 'product' perspective of self-direction; firstly that of self-management in terms of a willingness and ability to undertake one's own education, and secondly that of self-determination which is strongly related to personal autonomy.

Mocker and Spear (1982) view SDL as simply positioning the locus of control of learning decision making (learner vs institution) in terms of learning objectives and means by which learning takes place. Formal learning, Non-formal learning, Informal learning and Self-Directed learning make up the four quadrants of their model.

SDL is often linked with adult education and in particular andragogy, which was developed by Knowles as a theory of adult learning (Brookfield, 1985; Brockett & Hiemstra, 1991; Oddi, 1987; Pratt, 1988; and many others).

2.2.3 SDL WITHIN FORMAL EDUCATION

Despite on-going debates in SDL, a core underlying assumption of SDL is "that learning in adulthood means growth in self-direction and autonomy" (Candy, 1991; Chene, 1983; Kasworm, 1983; Knowles, cited in Caffarella, 1993). This drives the focus on developing responsibility for and control of the learning process in many formal undergraduate programs as students move towards adulthood, as well as in this particular study.

Knowles (1975) and Tough (1979), working in adult education in the context of higher education, were early supporters of the need to incorporate SDL into formal learning. Knowles (1984) defines a design for the andragogical learning process starting with the need to create a climate for adult learning and then involving learners in the various aspects of planning, designing, implementing and finally assisting in evaluating their learning. Tough (1979) defined 13 steps for achieving the learning process, many of which are included in Knowles' design.

Brookfield argued against the assumption that all adults are by nature self-directed learners, with clearly and correctly defined "felt needs" and who simply need educators to facilitate learning in which these needs can be met. While he acknowledges the importance and role of the learner in determining what they wish

to learn, he argues that educators have a responsibility to provide guidance and support to learners in determining their educational needs (Brookfield, 1985).

Brockett (2006) suggests too, that while Rogers (1983), Tough (1979), Hiemstra (1994) and many others since, argue that self-direction requires freedom in choice of what to learn, complete freedom or unlimited choice may lead to problems for students. Citing Schwartz (2000), he explains how over-emphasised self-determination "can lead to confusion, frustration and even depression", leading not to "*freedom* of choice but to *tyranny* of choice" (Schwartz cited in Brockett, 2006, pp 29; his emphasis). He suggests that educators support students in negotiating the "paradox of choice" by helping them to prioritise goals, identify which choices are most important, and decide which options are most valuable or appropriate (Brockett, 2006, p 32).

Hiemstra (1994), furthermore, recognizes that learners need support in learning the skills necessary to successfully carry out SDL; including how to learn, what approaches and resources are available or suitable, and how to evaluate their learning. He acknowledges that this may well add challenges and complexity to the teaching process, but believes that creating opportunities for some learner control is, in most cases as important if not more so, than the content of what is being learnt.

Pratt suggests that self-direction is "a situational attribute, an impermanent state of being dependent on the learner's competence, commitment, and confidence at a given moment in time" (Pratt, 1988, p. 162). He puts forward roles that teachers can play in facilitating learning with students of varying levels of self-direction. Caffarella (1993) suggests that the desired level of learner control varies situationally depending on learner readiness, knowledge content and necessary instructor control, with Ross-Gordon (2003, p. 44) suggesting that instructors using SDL approaches be prepared for "diversity both among students and across situations for the same individual and be prepared to make adjustments in expectations or level of support." Brockett and Hiemstra (1991, p 11) propose self-direction as occurring on a continuum "for all persons and in all situations".

Grow (1991) concurs with this, observing that students possess different levels of ability with which to approach SDL situations. Basing his model on Hersey and Blanchard's Situational Leadership Model (as cited in Grow, 1991), Grow put forward a Staged SDL (SSDL) Model which aims to actively equip students for SDL

by identifying their current readiness for SDL and teaching accordingly. Readiness is defined as a combination of motivation and ability, and is also recognized as being potentially situational or task specific.

Garrison's (1997) model identifies two necessary aspects of motivation; that required to initiate the SDL undertaking which is based on a learner's perceived value of a goal and expected success in the undertaking, and that required to maintain the effort towards achieving the goal during the SDL activity. This motivation is also said to mediate between the self-monitoring of the SDL effort and the self-management of the processes and tasks involved, as shown in figure 2.1 below.

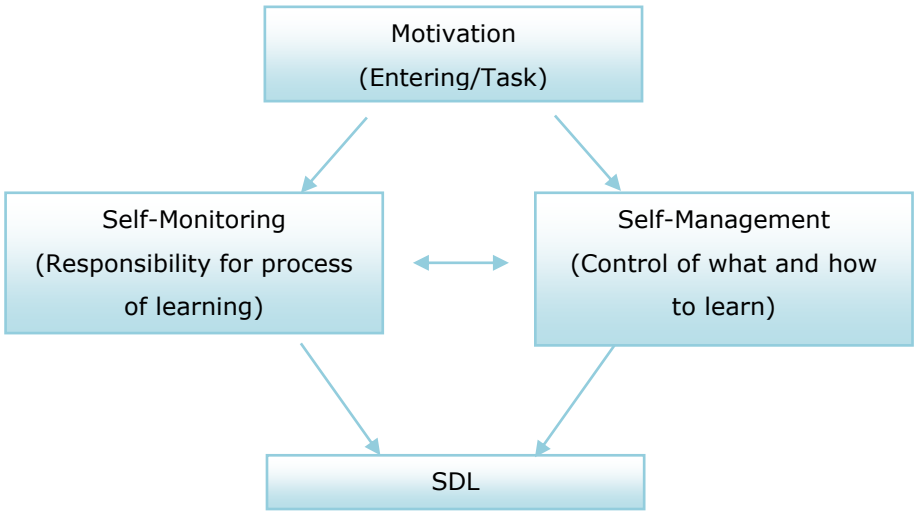


Figure 2.1 Dimensions of SDL based on Garrison (1997)

Grow uses SDL in the context of his model to represent the degree of control that learners have over the learning situation, based on Candy's learner-control/teacher-control in formal education situations, summarized in Table 2.1.

For Grow, the teacher's purpose is to match their role, teaching style and approach to the level of student readiness for SDL. In a similar way to the situational leadership model, students should gradually develop towards a higher degree of self-directedness.

Grow does however recognize that a student's level of self-directedness is unlikely to be the same across all learning situations. Some features of self-directedness relate to things like motivation, prior knowledge, experience or ability, which might vary considerably across subjects or areas of endeavour for any particular student.

Other aspects like persistence or confidence are more personality traits and are likely to be consistent across situations at a particular point in time.

Although the SSDL model is designed with progression through the various levels in mind, Grow acknowledges that the progress of both individual students and classes is unlikely to be linear, and that any class is likely to have a mix of levels of SDL readiness amongst the students. This led to the conceptualization of the non-linear iterative SSDL in which a course or program is organized around one particular level but draws on other levels as appropriate. For example, first or second year undergraduates would typically be seen as Stage 1 dependent learners, most comfortable with immediate feedback from instructors whom they view as experts. However, they may also respond well to guided discussions in areas in which they feel more confident, or to inspirational lectures, both activities viewed as being more suited to stage 2 learners.

Stage	Student Readiness	Ideal Teacher Role	Examples
1	Dependent – low self-direction	Authority, Expert, Coach	Informational lectures Immediate feedback
2	Interested – moderate self-direction	Motivator, Guide	Inspirational lectures Guided discussion Goal setting, learning strategies
3	Involved – intermediate self-direction	Facilitator	Facilitated discussion Seminars Group projects
4	Self-directed – high self-direction	Consultant, Delegator	Dissertation Internship Individual work Self-directed study group

Table 2.1 The Staged Self-Directed Learning Model (Grow, 1991)

Caffarella (1993) cites several other models and ideas for incorporating SDL into formal learning that have been put forward, including those by Candy (1991), Hammond and Collins (1991), Hiemstra and Sisco (1990), Knowles (1975 and 1986), and O'Donnell and Caffarella (1990).

2.2.4 Skills, Values and Learner Attributes for Success in SDL

Skills for SDL Success

Knowles and Tough identify the following skills as necessary for SDL, incorporating them into their models for developing SDL: the ability to self-analyse and diagnose learning needs and set appropriate learning goals; to develop a learning plan or contract to achieve the goals, specifying appropriate resources and strategies; to implement the plan and evaluate the learning. Various other authors including Brookfield (1985), Candy (1991), Candy, Crebert and O'Leary (1994), Duffy and Bowe (2010); Hiemstra (1994), Knapper and Cropley (2000), Knowles (1984) and Schön (1991) define the characteristics of effective lifelong learners as being the ability to: set learning goals; identify and apply appropriate knowledge and skills; undertake self-evaluation; identify and obtain required information, and use varying learning approaches. In addition, Guglielmino and Guglielmino (2003) identify basic study skills, time management and planning and organization as critical for SDL. These skills support the SDL goals of acquiring knowledge or skills or improving the capacity for SDL, underpinned by humanist and behaviourist philosophies (Ellinger, 2004).

Hammond and Collins (1991) working within the critical pedagogy paradigm, call for reflection on needs beyond the personal, to include the "social, economic and political contexts in which they are situated".

Values and Attributes for SDL Success

Learner autonomy is strongly linked to the idea of SDL. Chene (1983) describes autonomous learners as independent, able to make choices, and capable of "articulating the norms and limits of a learning society" (cited in Caffarella, 1993, p 29). Candy adds to this, strong values and beliefs, particularly self-restraint, self-discipline and persistence, together with a willingness and ability to undertake one's own education (1991).

Garrison (1997) introduces the ideas of self-monitoring in which the learner takes responsibility for constructing meaning in their learning "through critical reflection and collaborative confirmation" (p 24) and self-management in which the learner manages the learning tasks in terms of what and how to learn.

Brockett and Hiemstra (1991) identified learner self-direction as "being a personality construct" (Ellinger, 2004, p 165) and taking personal responsibility and

ownership for the required behaviours and thinking as being fundamental to self-direction.

Guglielmino (1977) developed a Self-Directed Learning Readiness Scale (SDLRS) which measures eight factors: openness to learning opportunities, self-concept as an effective learner, initiative and independence in learning, informed acceptance of responsibility for one's own learning, love of learning, creativity, future orientation, and ability to use basic study and problem solving skills. She also identifies "a willingness to seek help" and "valuing your own learning" as important attitudes for success in SDL (Guglielmino and Guglielmino, 2003).

Many of the above attributes depend on a student's willingness and ability to reflect on themselves, their actions, abilities and achievements, and to do this with insight and honesty. Hatton and Smith (1995) examined the use of journal writing to enhance reflection amongst education students. They identified four types of reflective writing ranging from reflective description (reporting of events), through descriptive reflection (includes some reasoning) and dialogic reflection (contains dialogue with self to explore reasoning) through to critical dialogue (providing reasoning that takes a broader context into consideration). In their research, 60-70 percent of the journal writing was found to be descriptive, and that evidence of critical reflection was found to be present in only 13% of the journals.

2.2.5 SDL Applications in the Curriculum and Workplace

As described earlier, accreditation for the majority of professions across the world now includes both the requirement for continuing professional education and preparation for undertaking lifelong learning (Houle, Cyphert and Boggs, 1987).

In Engineering Criteria 2000 (EC2000, 1996) the Accreditation Board for Engineering and Technology (ABET) changed the basis for accreditation of programs from inputs (what is taught) to outputs (what is learned), with "a recognition of the need for, and ability to engage in lifelong learning" (Parkinson, 1999). Similar changes are seen elsewhere in engineering accreditation requirements, for example Ireland (Duffy and Bowe, 2010), resulting in the implementation of strategies in undergraduate engineering education programs to support the development of lifelong learning skills, (Chen, Lord, Nottis, Prince, Stephanou and Stolk, 2010).

Similar requirements or recognition of relevance exist for graduates in other professions and careers, such as Law (Morton, Weinstein and Weinstein, 1999), Healthcare (Iwasiw, 1987; Violato and Lockyer, 2006; Li, Paterniti, Co and West, 2010; and many others), Education (Bolhuis, 2003; Ponton and Carr, 2000, and many others), Computer Science (Ellis, 2007) and Information Systems (Vat, 2006).

Interestingly, "IS 2010: Curriculum Guidelines for Undergraduate Degree Programs in Information Systems", which is arguably the most accepted formal definition of curriculum standards for the IS discipline, makes no mention of the need for any on-going career development or preparing students for this eventuality. IS 2010 is co-developed by the Association of Information Systems (AIS) which boasts a large international membership of both individuals, corporations and academic institutions and is home to the most influential IS journal and conferences. The document highlights the changing nature of the discipline and identifies both specific discipline knowledge and skills for inclusion in IS curricula together with a wider set of attributes that reflect the wide-ranging influence of the discipline. However, unlike the curriculum documents and accreditation standards of the recognized professions, IS 2010 fails to acknowledging the need for on-going "professional" development.

Candy (1991) in discussing his work on developing lifelong learners during their undergraduate studies, references an inaugural address given in 1852 at the University of Sydney in which the Rev Dr John Woolley refers to "the beginning of this lifelong journey of continuing learning, and that in a sense, by focusing on developing lifelong learners in undergraduate programs, universities are reaffirming their historic commitment to providing support in its many forms, contexts and manifestations throughout life".

In the corporate world too, with the advent of the knowledge economy and the emergence of the learning organization, there is growing awareness of the value of the knowledge worker and the need to ensure on-going development and learning at the individual level (Confessore and Kops, 1998). As skills and knowledge are fast becoming "perishable commodities" (Ellinger, 2004, p 166) so employees, of necessity, must participate in on-going, career-long learning and development (Guglielmino and Murdick, 1997; London and Smither, 1999; Zemke, cited in Ellinger, 2004). SDL is finding a place in human resource development research as a means by which to provide companies with "responsive and cost effective

learning infrastructures" and individually specific and flexible approaches to staff development (Ellinger, 2004, p 166).

2.2.6 The Challenges of SDL

Readiness for SDL has an impact on what students learn from an SDL intervention and the degree to which their skills for on-going SDL are enhanced (Dynan, Cate, and Rhee, 2008). Readiness is defined as a combination of ability and motivation, and is also recognized as being potentially situational or task specific (Grow, 1991).

In their study, Dynan et al (2008) investigated the importance of structure for students undertaking SDL studies, and found that a level of structure and guidance was important for those students scoring low on the SDLRS at the start of a SDL experience if they were to enhance their skills for SDL during the task and undertake SDL tasks in the future. Structure was less important for the few students who scored more highly for SDL in the pre-test.

As was seen earlier, Grow (1991), Pratt (1988), Caffarella (1993) and others acknowledge that features of self-directedness might vary considerably across subjects or areas of endeavour for any particular student, with some personality traits that affect SDL like persistence or confidence more likely to be consistent across situations at a particular point in time. All these aspects however, will definitely vary across a class of students (Ross-Gordon, 2003), making it difficult to cater adequately for all.

Motivation too presents a challenge to SDL. As Garrison (1997) points out, motivation is needed both to embark on SDL as well as to ensure that students complete the process.

Coupled with this is the problem identified by Fellows, Culver, Ruggieri and Beston, who describe the majority of contemporary students as "Utilitarian Academics" for whom "the goal of gaining an education as a means of becoming a total person has become lost in the drive for certification in a professional field with prestige and high financial compensation" (2002, pp F2A-12). They further suggest that these students "rarely put effort into anything for which they do not get academic credit" (2002, pp F2A-13).

Morton et al (1999) report one of the challenges encountered in introducing learning contracts and self-directed learning as part of a final year law program, was a lack of internal motivation. Despite being voluntary, many students felt

pressurised into doing the program in order to enhance their résumé, and their motivation was therefore external. Knowles (1984) does not believe external motivation to be sufficient to drive self-directed learning.

2.3 Designing and Implementing the PDP: Drawing on the Literature

So while the need for IS undergraduates to be successful self-directed lifelong learners is gaining more widespread acceptance, the debate around core curriculum, skills development and the pedagogical and assessment approaches that best support these imperatives, remains on-going.

In this section I discuss the design and implementation of the Personal Development Portfolio, locating it in the wider context of the teaching and learning objectives across the 2nd year IS course. The selection, adaptation and application of principles, guidelines and frameworks, drawn from the above literature, to the PDP are discussed.

2.3.1 The IS Curriculum

Stenhouse (1975) defined curriculum as "an attempt to communicate the essential principles and features of an educational proposal in such a form that it is open to critical scrutiny and capable of effective translation into practice". A curriculum should therefore consist of "a planned set of worthwhile activities related to important material within the expectations of a subject community" (Stenhouse, cited in Shalem, 2010, p 95).

The IS curriculum for the 2nd year students is based on progression from the first year curriculum and with the purpose of preparing students for progression to their 3rd year of study and beyond. The curriculum is very similar in content, and to a large degree follows a very similar approach, to that used in most other IS departments or schools both locally and internationally.

In IS 2010: Curriculum Guidelines for Undergraduate Degree Programs in Information Systems, Topi et al (2010) suggest that the major revision undertaken to the curriculum guidelines is necessary due to the "rapid and frequent change" faced by the ever more global IS industry, leading to the need to re-evaluate the core focus and outcomes of an IS degree. IS curriculum development and review are frequently based on literature related to predicted workplace skill requirements

(Noll & Wilkins, 2002), or by working with industry advisors (Srinivasan, Guan & Wright, 1999).

Within the IS department at Wits, curriculum based decisions are informed by guidelines such as IS 2010 (Topi et al, 2010), interactions with other universities via external examining processes and visiting professors, and conversations with our advisory board and IS graduate employers. Within this, individual lecturers and course coordinators have a certain amount of freedom in terms of both the content and process of what they teach, provided students are seen to progress through the years of study with the knowledge and skills needed for subsequent years of study and ultimately practice in the discipline and industry.

When introducing the SDL aspect of the second year of study, it was therefore important to balance the benefits of developing SDL with ensuring that students were still able to successfully engage "with the webs of practice in an organised, coherent and systematic way" (Shalem, 2010, p 95). The focus of the PDP was therefore around aspects of the IS curriculum that were less reliant on "principles of selection, sequence and progression" (Muller, 2006a & b) in maintaining curriculum coherence.

2.3.2 Designing the Self-directed Learning Experience

When designing the SDL experience, the focus in terms of SDL was on developing an awareness of the need for SDL skills for on-going professional development, as well as developing some of the skills necessary in undertaking a SDL project.

The students in question at the start of their second year of study are young "soon-to-be" adult learners and therefore do not display the typical characteristics of adult learners such as felt needs, self-direction, voluntary participation, critical reflection, and so forth (Brookfield, 1985, Morton et al, 1999). In particular, as students in a formal educational setting with little or no real experience, they do not necessarily as yet have "perceived needs" or gaps in their knowledge and skills that they are aware of, that could be pursued through a SDL-based course. In fact many students question the relevance of some courses taken in their degree or IS major in terms of their future careers. Mindful too of Brockett (2006) and Schwartz's (2000) warnings around difficulties related to too broader choice, the SDL-based experience therefore created a situation in which students are required to identify gaps in their knowledge and skills in a specific and relevant context and plan to work towards closing some selected gaps.

Using Grow's Staged Self-Directed Model as a guide, the SDL experience was organised around the Stage 2 (Moderate) level of self-direction applying the non-linear, iterative approach (Grow, 1991). At this stage, learners are described by Grow to be "available", "interested or interestable", and will respond to motivation and tasks that they view as being worthwhile. The teacher at this stage should bring excitement, enthusiasm and motivation to the classroom, promoting the importance of the knowledge and skills, and providing support and personal interaction. Goal setting and various learning strategies are used at this level.

The non-linear, iterative approach recognises that regardless of their stage of self-direction, learners might need higher or lower levels of support in some aspects or areas and makes allowances for this as shown in figure 2.2.

As students are helped to progress towards the stage 3 level of self-directedness, goal setting and a movement away from extrinsic motivation toward more intrinsic motivation, using encouragement and support rather than rewards and praise, is appropriate. Students should begin to develop a deeper sense of themselves including their goals, personality type and preferred learning styles (Grow, 1991).

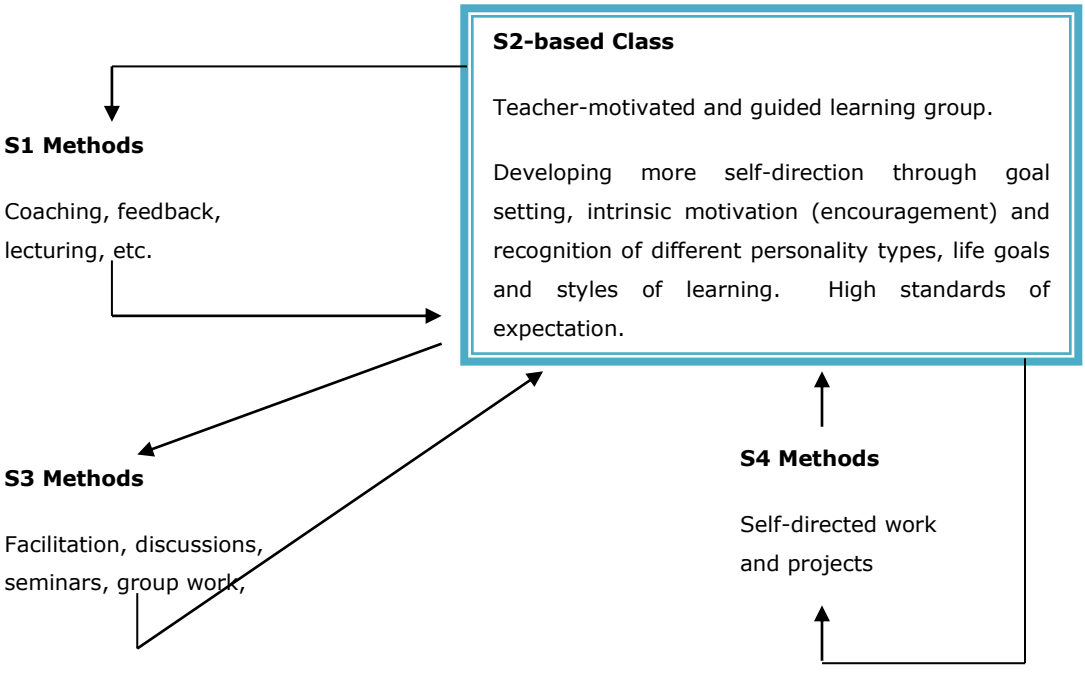


Figure 2.2 A Stage 2 based class - Adapted from The Staged Self-Directed Learning Model – Non-linear, Iterative Approach (Grow, 1991)

The Personal Development Portfolio - A Self-directed Learning Experience

The SDL experience was conceptualized around a Personal Development Portfolio (PDP) in which students are challenged to start developing a professional identity. Students were working on a case study based Systems Analysis and Design project at the same time in self-selected teams of four or five students. The focus of the portfolio was given as follows:

> *As you begin your 2nd year of IS study, you go beyond a general understanding of the discipline and start to explore the world of work of IS professionals, and work towards developing the knowledge, skills, attitudes and attributes needed for success in IS careers.*
>
> *As you will begin to see, there are a multitude of different roles, careers and working environments in which IS professionals work, and over time you can expect to move within these and require new knowledge, skills etc. in order to succeed.*
>
> *Our focus in the Portfolio of this project is to allow you to focus on your emerging **IS Professional Identity** – to think about **your** particular career aspirations and to focus on developing yourself towards these goals. I hope that you will find this a rewarding and enlightening experience. (extract from PF1r – see Appendix B)*

The overall design of the PDP was aimed at Stage 2 of Grow's SSDP with supporting class activities and the team project, drawing on stage 1 and 3 approaches. It was completed over the first semester of the second year of study, with 3 submissions occurring at the beginning, towards the middle and end of the semester. The first submission entailed analysing, selecting and planning for some SDL; the second required students to reflect on their learning to-date and make any amendments to their proposed learning goals and learning contract; and the third was a report back on their learning and a reflection on their achievements. While the literature used to guide the development of the PDP is all international and might therefore not take into account some of the unique readiness issues of South African students, in the absence of South African work, it was thought to be useful in a first design.

PDP Submission 1

In the first submission, students were asked to do the following (see appendix B – PF1r, PF1f and PF1qa):

Ideal Job Profile – students needed to find an advertisement for their dream job, and, using the advertised criteria and their research on similar positions, to draw up a profile of the knowledge, skills, experience, attributes, interests, and attitudes, that an ideal candidate for the position would possess. The selection of, and investigation into, a specific job and possible future career was used to create a

relevant context in which to situate the SDL experience, and at the same time included an aspect of the curriculum for the IS II year of study: roles and responsibilities of IS professionals in the systems development lifecycle.

Personal Analysis – students were then asked to position themselves against the criteria they had identified for their dream job using a SWOT analysis. This was used to establish "felt needs" (Brookfield, 1985) and to provide students with the opportunity to self-analyse their knowledge and skills in a particular context and identify any knowledge or skills gaps (Knowles, 1984; Tough, 1979, and others – see 2.2.3).

Personal Development Plan – thereafter, students drew up a development plan for the first half of the year that focused on **two or three** aspects of the knowledge, skills, values, etc. that they would need to acquire or develop prior to landing their dream job. The goals should be focused, manageable, and achievable, working towards a sense of development, growth and achievement. Students were told that they were not necessarily expected to reach the final point of a goal, but to make some progress towards it. This aspect of the SDL experience required students to draw up a learning contract (based on a given template – see LCtmp in appendix B) identifying learning goals, resources and strategies, and specify the way in which they would demonstrate, measure and evaluate their success towards attaining these goals (Tough, 1979, Knowles, 1984, and others as referenced in 2.2.3)

Reflective Review – finally, students were asked to keep a learning journal that should serve both to record and report on work towards their goals and reflect on their progress, successes, difficulties, and so on. The journal could then be used as a resource for writing a brief reflective review for each of their three submissions. The reflective review for their first submission asked them to write about their feelings relating to this portfolio with guiding questions. (See PF1r in appendix B)

PDP Submission 2 and 3

The two subsequent submissions required students to report on progress against their learning contract or plan, and to write a reflective piece; in the first case on a critical learning incident relating to their learning goals, and in the final submission relating to their overall experience of engaging with the SDL portfolio (see PF2r, PF2f, PF2qa, PF3r, PF3f and PF3qa in appendix B). The final portfolio piece also required the inclusion of a portfolio of evidence (PoE) in which students would

include aspects of their resources, strategies, and demonstrations of learning and achievements as specified in their earlier learning contracts of PF 1 and 2.

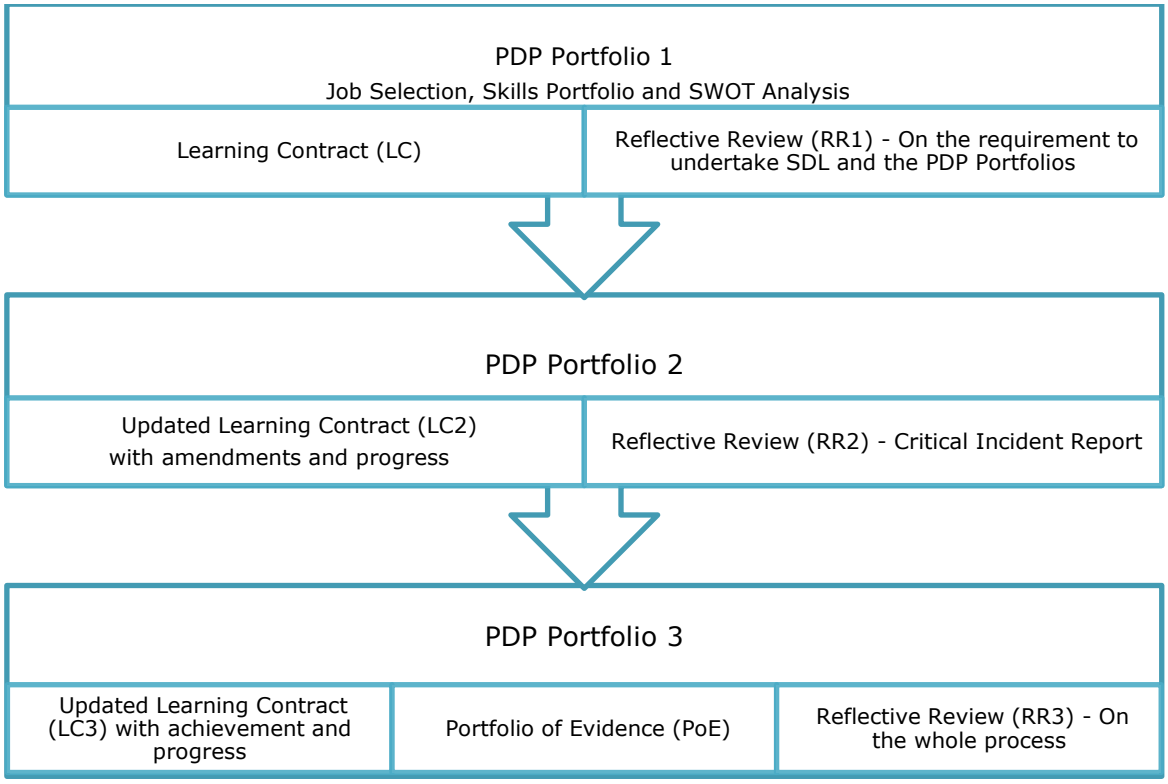


Figure 2.3 The PDP

2.3.3 Initial Reflections on the Self-directed Learning Experience

Looking back at the response to the PDP SDL experience, many interesting reactions emerged. Many students began by embracing the idea as we discussed the PDP in class. However as some of the details emerged a few students began to display signs of unhappiness with the requirements. Comments like "Why should we have to do this?", "I can't (won't) keep a learning journal", "this is a waste of time – what does it have to do with IS?" emerged.

The majority of students however seemed open to the idea, and it was only as the date for submission approached that they started to show fear, anxiety and resistance to the idea. Their comments related to issues around lack of knowledge about how to do this - "but how can we decide what to learn or how to learn", inability to write, too much work to do, and relevance to their work right now. Others resented the lack of explicit guidance.

When reading and assessing their early submissions I found huge differences in the quality of work submitted by the students. Some students had failed to follow the guidelines, both the written requirements and those discussed in class. Others had done pieces of the work but it lacked completeness and coherence. Some pieces of work were good to very good, but seemed still to be accompanied by comments in their reflective writing that showed that they were unhappy or resentful of the task they had been given. All the above observations support Long's (1994) suggestions that introducing SDL constitutes change, with the potential for reactions of resistance.

A few students, and interestingly not always the expected high achievers, managed the first task well and began the work with positive energy and enthusiasm, displaying abilities that hadn't come through in previous work.

Over the course of the semester, many students improved their submissions considerably and as they gained confidence in what they were doing, seemed more able to pursue their learning goals and reflect more readily and with a degree of openness and self-awareness on what they were achieving.

As the course leader, I was frustrated by the fact that it took so long for students to see the value in what I was trying to achieve, thereby causing them unnecessary anxiety and limiting what they were able to achieve in the short time available. Furthermore, some students never seemed to reach the point of accepting the challenge and making the effort to try to achieve something.

In pondering the above I was struck by the fact that students essentially appeared to simply be reacting to change in many of the usual ways: fear, anxiety, resistance, apathy and sabotage. I therefore began looking to the literature for guidance that would enable me to design and implement an SDL experience using an appropriate approach.

2.4 Change Management and Organizational Development

Organisational change seems inevitable today, regardless of the extent to which organisations are ready to deal with it (By, 2007). Increased competition and the need for strategic flexibility and adaptability brought on by globalisation, is affecting almost every organisation today, regardless of size, market, focus, etc. (Jaros, 2010). These changes occur across the spectrum and include strategic, structural,

operational, process and cultural change (Armenakis, Harris & Mossholder, 1993). Managing organisational change successfully therefore remains one of the most important focuses of all levels of management, just as embracing and surviving change is important to all employees. Change initiatives however are far from easily accomplished, with Balogun and Hailey (2004) reporting that approximately 70% of initiatives are not completely successful.

Change albeit in an organisational setting is an intensely personal experience. Duck (1993) claims that in order for significant change to occur in any organisation, each person within that setting must undergo a change, in terms of their thoughts, attitudes or actions. Reaction to change is often associated with similar emotions to those experienced with loss and grief (Kübler-Ross, 2008; Carr (2001); Elrod II & Tippett, 2002). Strickland (as cited in van Schoor, 2003) identifies loss of identity, in which the setting of a job or role changes; loss of belonging, in which teams or relationships are broken, or loss of meaning in which long held occupational values are changed. Loss of mastery (Moran & Brightman, 2001) is experienced when the change is such that new skills have to be learned in order to continue to perform as before.

Change is viewed by many as difficult; difficult to conceive and difficult to implement, not least because of the people issues involved (Carnall, 2003). Change management seeks to employ formal strategies to counter the organisational and people issues encountered in times of change. In particular, resistance to change receives much attention. Carnall (2003) argues that what is referred to as resistance to change could be better explained as resistance to uncertainty. Trader-Leigh (2002) identifies specific factors that contribute to resistance to change including self-interest, in which the change is seen to negatively impact on the person in some way, psychological impact, in which the change is perceived to threaten expertise and social status in the organization, and the redistributive factor, in which the redistribution of tasks and responsibilities might directly affect the person.

Armenakis et al (1993) suggest that an organisation's readiness for change can be seen in the beliefs, attitudes, and intentions of employees relating to the perceptions of the extent to which the change is needed, and the capacity of the organisation to achieve it. Furthermore, they suggest that "readiness is the cognitive precursor to the behaviours of either resistance to, or support for, a change effort" (Armenakis et al., 1993, pp 681-2). Jones et al. (as cited in By,

2007), describe readiness as reflected in "positive views about the need for organisational change (i.e. change acceptance)", together with the belief that the change will benefit both themselves and the organisation.

While many researchers have discussed the importance of creating readiness in change management initiatives, readiness is most often treated together with resistance as a means by which to reduce resistance thereby increasing the potential for successful change (Armenakis et al, 1993). They argue that by viewing readiness as separate from resistance, a more proactive and positive change management approach is likely.

Organisational change has been conceived of as having many dimensions requiring consideration during the process. These include the nature of the change, the end result, roles, styles, timing, scope, capacity, capability, readiness, etc. These in turn have led to various definitions of principles of change management, and methods or approaches to leading organisational change initiatives.

Kotter (1995), Jones et al (2005), Armenakis et al (1993), Armenakis and Harris (2002), and others, all recommend that organisations seek to establish a degree of change readiness before embarking on any organisational change. Armenakis et al (1993), and Armenakis and Harris (2002), propose using a change message to create this readiness, defining five key message components and three conveying strategies as shown in Table 2.2 below.

Key message components	Message conveying strategies
Discrepancy (is change really necessary?) Efficacy (can this change be implemented successfully?) Appropriateness (is this the change required?) Principal support (are leaders and managers committed to this change?) Personal valence (what is in it for me?)	Persuasive communication (direct communication, e.g. speeches and memos) Active participation (vicarious learning and participation in decision making) Managing internal and external information (provide the views of others, e.g. consultants)

Table 2.2 The Change Message (By, 2007; adapted from Armenakis et al (1993), Armenakis and Harris (2002))

Kotter (1995), recognised as one of the leading experts in the field of change management, proposes "Eight Steps to Transforming Your Organisation" (see table 2.3 later in the chapter), while Kanter et al's (1992) "Ten Commandments for Executing Change" can be linked to many of the readiness factors (see table 2.4 later in the chapter).

Strebel (1996) recommends incorporating "revision of personal compacts" in the process in order to deal with uncertainty and resistance. The "personal compact" is defined by Strebel as the "mutual obligations and commitments that exist between employees and the company", both formally and implicitly. It is seen as defining an employees' view of their responsibilities, level of commitment to their work, and the values held by the company, in terms of three dimensions: formal, social and psychological. Similarly, Maguire's psychological contract (as cited in van Schoor, 2003) suggests the need for a balance between the demands made by an organisation on its employees' skills, knowledge and experience, and the way in which organisations recognise the needs and values of its people. When change occurs, lack of attention to existing personal compacts may result in perceptions of breach of trust, as employees face an unpredictable future and uncertainty in terms of their role and capability in the new order. It is therefore vital that leadership formally revise personal compacts in times of change (Strebel, 1996). The ADKAR model (Hiatt, 2006) presents a readiness model that focuses on the individual and their role in the change, focusing on developing awareness, desire, knowledge, ability and reinforcement of the proposed change.

The role of the change agent or leader also receives a fair amount of attention in the change management literature (Higgs & Rowland, 2010) with research including the role of leadership in change management success and how leader beliefs can influence their choices in approaches to change management and its implementation. Higgs and Rowland examined leadership behaviours on change success in differing contexts, identifying three broad sets of leadership behaviour, mind-sets and practices (2010). Shaping Change was defined as a leader-centric approach in which the leader controls what is done; Framing Change focuses on creating a framework through which contribution to change by others is possible; and Creating Capacity enables change through individual and organization capability, encouraging growth and learning (Higgs and Rowland, 2010).

2.5 Identifying the Appropriate Frameworks and Guiding Principles

While much of the change management literature deals with organisational change or personal change in the organisational setting, the changes being made to the students' learning environment are very similar to organisational change in terms of the demands they make on the students, and the effect and reactions that they might be expected to produce.

Firstly, lecturers are likely to perceive the changed learning environment in a very different way to the students. While lecturers introduce pedagogical change in response to perceived needs and benefits, students are unlikely to welcome a change which takes them out of their comfortable and familiar approach to learning, and imposes new, unfamiliar demands on them, in the same way as Strebel's (1996) employees view change as disruptive and unwelcome as it removes the stability of their world. Similarly, as employees feel that their "personal compacts" with the company and management have been changed, so students may well feel that their relationship with the educational institution and staff has changed. Uncertainty in terms of roles, responsibilities, support, assessment and evaluation, effort and reward, might emerge.

Secondly, a radical change in the design of a course can be viewed as very similar to radical change in the way an organisation does business. Organisational change can include changes in terms of business processes, products or services, the market it serves, the way it interacts with customers or suppliers, etc. In the same way, the change from a traditional, lecturer driven course to a SDL experience brings new processes, different outcomes or products, serves a different market (self-directed, adult learners) and interacts with the students in a very different way.

When the SDL-based PDP was first introduced, the students were clearly anxious about how they would cope within this new educational setting, which was in many respects unpredictable in terms of its demands, and for which they felt unprepared and inexperienced. For many of them, the academic world had turned upside down. They were being asked to decide what they needed to learn, how to go about learning it, to assess their achievement and decide how to demonstrate or provide evidence of their achievement. In essence, their accepted view of how things should work had been violated, and an unwritten agreement broken.

Starke, Sharma, Mauws, Dyck, and Dass suggest a "growing consensus that successful implementation of transformational change requires an emphasis on both leadership (the social / emotional / relational aspects of change) and management (the technical / instrumental / task aspects of change)" (2011, p 30). With this in mind, it makes sense to use a two-pronged approach to identifying and adapting appropriate frameworks and principles to support the pedagogical change initiative; firstly those that will enhance the leadership aspect of the lecturer's

(change agent's) role and secondly those that will allow for the management of the process.

2.5.1 Leading the Change

Successful leadership of change implies ensuring that the social, emotional and relational concerns of those directly affected by change are considered and made provision for, by the change agent (Starke, Sharma, Mauws, Dyck, & Dass, 2011).

"One of the paradoxes of change is that trust is the hardest to establish when you need it most" (Duck, 1993, p 69). She further suggests that trust during change relies on "predictability and capability" (1993, p 70). Strebel's (1996) approach of explicitly acknowledging the change in the pre-existing albeit unwritten or unspoken personal compact, in this case between student and lecturer, might therefore be useful in achieving student buy-in to the new learning approach, as trust between lecturer and student must be established and maintained in order to facilitate a successful transition into the new learning environment (Duck, 1993).

Taking cognisance of Carnall's (2003) view that change is seen as difficult due in large part to the people related issues, I began by looking at the issues that had emerged during the early stages of the SDL experience, and many of them seemed related to a either real or perceived fears that the students held, around their ability to do what was being asked of them. In other words many of them seemed to believe that they were not ready to engage with or perform the tasks needed for the SDL experience. The other set of reactions seemed to link to motivation, with students either not seeing the value in what they were being asked to do, or not being prepared to put in the effort required to achieve the results.

Both the motivation and abilities could be clearly linked to issues raised with regard to readiness for change and highlighted for me the need to think about how to begin the SDL experience by first attempting to ensure readiness for change before expecting students to embark on the experience itself. The ADKAR model (Hiatt, 2006) as shown in figure 2.4 below, with its focus on individual readiness for change should be of great use in supporting the students as they embark on the PDP using formalised SDL for the first time.

Duck (1993) claims that in order for significant change to occur in any organisation, each person within that setting must undergo a change, in terms of their thoughts, attitudes or actions. Having considered the early response to the SDL experience I

realised that the first change was required of me – as change leader or facilitator. The challenge is to understand what type of change I am leading, what type of shift I am expecting from the students, and how I can blend the role of change leader or facilitator with the type of teaching role needed for Grow's Stage 2 SSDL model.

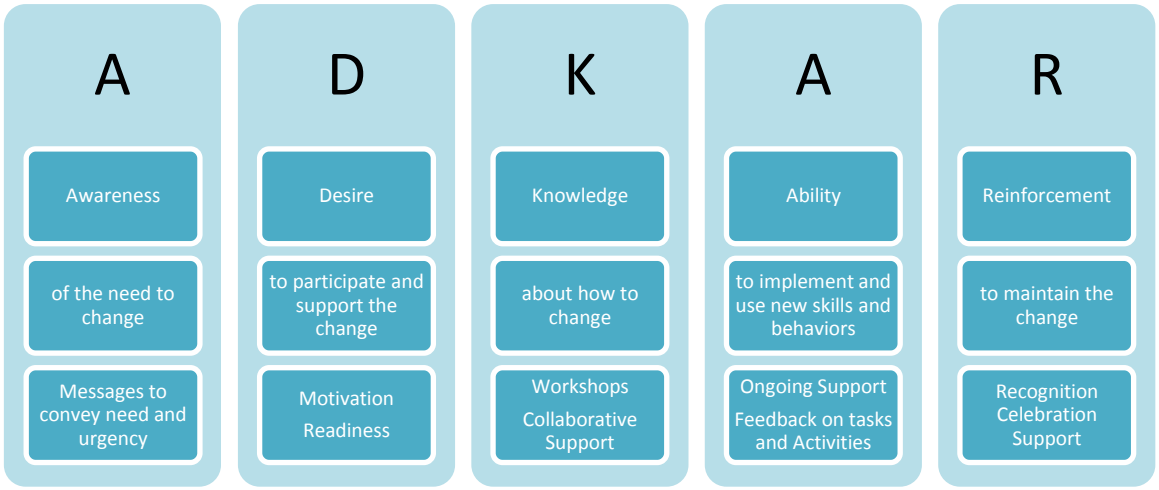


Figure 2.4 Adapted ADKAR Model

2.5.2 Managing the Change

Potgieter and Bruce-Ferguson (2003) suggest that top down change in educational institutions which is typically delegated to heads of departments, untrained in change management and not tasked with it in their formal job descriptions, should draw on action research together with organisational change management approaches. As action research is frequently used to drive, manage and evaluate educational innovation it makes sense to include it as part of the change management approach in this situation.

Of use in guiding the work towards both readiness for change and actually managing the change process, could be an adapted version of Kotter's (1995) "Eight Step Model for Transforming Your Organisation", a summary of which is set out in table 2.3. This model could also provide guidance for the on-going redesign of the actual SDL experience, as well as for suggesting where supportive in-class exercises could be designed and implemented.

Kanter et al's (1992) "Ten Commandments for Executing Change" shown in table 2.4 would provide similar input and guidance to both the process of designing and managing the SDL experience, as well as supporting the move towards readiness.

The Eight Step Model for Transforming your Organisation	
1.	Establishing a Sense of Urgency
2.	Forming a Powerful Guiding Coalition
3.	Creating a Vision
4.	Communicating the Vision
5.	Empowering Others to Act on the Vision
6.	Planning for and Creating Short-Term Wins
7.	Consolidating Improvements and Producing Still More Change
8.	Institutionalising New Approaches

Table 2.3 Kotter's (1995) "Eight Step Model for Transforming Your Organisation"

Ten Commandments for Executing Change	
1.	Analyse the organization and its need for a change
2.	Create a shared vision and common direction
3.	Separate from the past
4.	Create a sense of urgency
5.	Support a strong leader role
6.	Line up political sponsorship
7.	Craft an implementation plan
8.	Develop enabling structures
9.	Communicate, involve people, and be honest
10.	Reinforce and institutionalize the change

Table 2.4 Kanter et al's (1992) "Ten Commandments for Executing Change"

While essentially aiming for similar outcomes and in many instances overlapping, the above two models have slightly different emphases and starting points. In adapting and applying the models I draw from each at different points to add to and support an overall leadership and change framework suitable to my needs as change agent. Furthermore, aspects of the models are not necessarily suitable as they stand, as we are not working with an organisation but with a cohort of students who will move through the course and on to other courses. Therefore

steps that focus on institutionalising the approaches or changes need to be reconceived in terms of the individual.

2.6 Conclusion

In this chapter I reviewed literature relating to SDL, and to some experiences and challenges of SDL in formal higher education. Thereafter I presented the design and thinking behind the PDP based on Grow's Iterative Staged Self-directed Learning model.

I also examined the principles and frameworks used in change management, looking specifically at personal compacts, creating readiness for change, and frameworks that can be adapted and used to support and manage an SDL experience.

Reference to much of this literature will be made in chapter 3 in Table 3.6 linking research questions to particular concepts, themes and potential data sources, and chapters 4 and 5 in analysing and discussing the data and findings of this research.

Chapter 3: Research Design and Methodology

3.1 Introduction

The purpose of this chapter is to provide a detailed description, explanation and defence of the approach and methodology used in this research project. In particular I will identify and describe the guiding methodology for this study, describe the process of the selection, collection and analysis of primary data, justifying the choices I made in each case, as well as discuss my personal values, motivation and role as researcher. Issues relating to limitations to the study as well as ethical considerations impacting on the study are also discussed.

As stated earlier, this research project has a twofold objective in that it aims to evaluate a particular learning intervention in terms of the opportunity it provides students for developing as self-directed learners, while also exploring the potential for mediating change in the learning environment. These two aspects are examined through the main research questions:

1. In what ways does the Personal Development Portfolio (PDP) provide students with exposure to, and learning opportunities through which to develop self-directed learning skills, attributes and values?
2. What contribution can the application of change management and organisational development principles, theories and frameworks make towards mediating the change inherent in the previously unfamiliar pedagogical approach of Self-Directed Learning, thereby facilitating student adaptation and success?

Educational research has been categorised in many ways. Bassey (1999) defines three categories of empirical educational research: theoretical, based on achieving understanding, evaluative, which seeks to understand and evaluate, and action research, which attempts to understand, evaluate and improve. In a similar vein, Anderson (1998) defines four levels of educational research, descriptive (what is happening, or did happen), explanatory (why did it happen), generalisation (would the same thing happen under similar or different circumstance) and basic or theoretical (can an underlying principle be identified). This study falls within the context of Bassey's evaluative research, as it examines a particular situation in order to understand and evaluate it.

3.2 METHODOLOGY

The methodology used in this research is that of the Case Study. While the term case study is a familiar one, Merriam (2011) states that there is little agreement on what precisely constitutes a case study or how to approach this type of research. A general definition suggests that case study research involves the examination of a single instance of a unit or bounded system (person, class, programme, community, etc.) in action (Cohen, Manion and Morrison, 2007; Macdonald and Walker, cited in Bassey, 1999). Yin (2009) highlights the real-life context of the enquiry, and the fact that the examination takes place in situations in which the boundaries between the context and phenomenon are not clear. Yin's approach to case study research tends towards the positivist paradigm.

Stake (1995) on the other hand describes the case study approach as "the study of the particularity and complexity of a single case, coming to understand its activity within important circumstances", and in commenting on the difficulties of the case study approach, he warns that others might use different "words or methods" in examining the same situation, placing it in a more interpretive paradigm. Anderson (1998) writes that case study research tends mostly to be interpretive and occurring in natural settings, employing both qualitative and quantitative methods and measures.

Within the general case study method, several types of case studies are identified. Four broad styles of case study are identified by Stenhouse (cited in Bassey, 1999): ethnographic, educational, evaluative and action research, while Anderson (1998) lists six types identified by the United States General Accounting Office: illustrative, exploratory, critical instance, program implementation, program effects, and cumulative. Yin (2009) categorizes case studies into exploratory, explanatory and descriptive, and Stake (1995) distinguishes between intrinsic and instrumental case studies. While many of these types or categorisations overlap, they seek to define the purpose or use of particular types of case studies in terms of whether, for example, they provide a detailed description of a situation, allow for explanations or cause-effect relationships to be discovered, provide grounds for evaluation, or support the discovery or testing of theory.

The case study in this research best matches Stake's "intrinsic case study" as the overall interest lies in evaluating the PDP in terms of the opportunity it creates for students to develop the capacity for SDL. The intrinsic case study is described as

follows: "The case is given. We are interested in it, not because studying it we learn about other cases or about some general problem, but because we need to learn about that particular case" (Stake, 1995, p 3).

However, the second research question in this study, relating to the use of change management and organisational development theory in mediating educational change, introduces both an exploratory (Bassey, 1999) and instrumental (Stake, 1995) aspect to the overall case study. It is exploratory in that it seeks to explore the possible mediating effects of change management, and instrumental in that these effects might be felt in the wider spectrum of curriculum change.

A further useful concept that relates strongly to this research is that of illuminative evaluation as put forward by Parlett and Hamilton in their 1977 paper entitled "Evaluation as illumination: a new approach to the study of innovatory programmes" (cited in Bassey, 1999). Although they do not use the term case study, Bassey argues that illumination may take the form of an evaluative case study. The aims of illuminative evaluation are to study innovative programmes in order to document the experience of participants and their views on the advantages and disadvantages of the programme, as well as to identify and discuss significant features of the programme in its situation. Michael Quinn Patton's work in programme evaluation led to his involvement with qualitative enquiry in the 1980s as he focused on developing a "practice of utilitarian, pragmatic evaluation" based on existing qualitative research methods (2002, p 263). He argues that the purpose and audience of the enquiry should determine the strategy and design of the research, helping to define issues such as sampling approaches, how data analysis is undertaken, and how quality and credibility is assured.

Referring back to the aims of this study, the situation under examination is a single bounded system consisting of one cohort of second year IS students, which will be examined in detail in its context of the second year of study of IS, in order to evaluate a specific aspect of the course, the PDP, and to extract a picture and understanding of the experience of some of the participants in terms of the research questions.

As with any research methodology, case studies have certain strengths and limitations, and care must be taken in order to ensure that the research takes full advantage of the benefits that can be obtained from the strengths of the methodology, while avoiding or minimising the impact due to weaknesses or

limitations. Ironically, many of the strengths are the flipside of a weakness, and vice versa. In the following sections I will identify limitations of the case study approach and show how this study addresses each of these.

3.3 Working within the Limitations of Case Study Research

One of the major concerns raised in connection with a case study approach to research is that one cannot expect to generalise from a single instance or situation. The counter claim to this is that generalisation is not the intention, the objective being rather to obtain a rich and detailed understanding of a particular case that is important and interesting to the researcher. This is particularly true for an intrinsic case study, in which the interest in the case is what drives the research project; the case is selected and the issues to be explored, examined or evaluated are selected from those which are present within the case (Rule and John, 2011).

As stated earlier the second research question lends a more exploratory and instrumental role to the case study. While instrumental case studies are typically driven by the issues under examination and are selected as a suitable case through which to investigate the issues (Rule and John, 2011), in this case the issues became evident during examination of the case. So while instrumental case studies by their nature are instruments through which to examine a more general issue, in this case we would not expect to generalise from this case study, but instead to obtain an in-depth understanding from which to potentially further examine the issues in the future. Potgieter and Bruce-Ferguson (2003) concur, suggesting that managing change in an educational environment should also include a strong element of action research allowing for an on-going refinement of the approach, and the end point of this study could provide a starting point from which to initiate a further study using an action research approach.

The type of generalisation discussed above is what Maxwell (2005) categorises as external validity and Lincoln and Guba (1986) work with as transferability. While this is not seen as necessary or even desirable in case study research, internal validity within the setting (Maxwell, 2005) or credibility (Lincoln and Guba, 1986) is an important aspect of any research study and is considered in the following section.

3.4 Ensuring Quality and Credibility

"Without rigor, research is worthless, becomes fiction, and loses its utility."

(Morse, Barrett, Mayan, Olson and Spiers, 2002, p 14)

While the inquiry paradigm in which one works establishes "limits of legitimate enquiry" (Guba and Lincoln, 1994, p 108), the unique nature and demands of each qualitative or naturalistic research project ensure that researchers need to make methodological choices. Furthermore, each researcher has socially constructed lenses through which they view and interpret the world, so that "there is no clear window into the inner life of an individual. Any gaze is always filtered through the lenses of language, gender, social class, race and ethnicity" (Denzin and Lincoln, 1994, p 12). Furthermore, they highlight the fact that no observations or interpretations can be objective, but are "socially situated in the worlds of – and between – the observer and the observed."

Judging the quality and credibility of research and research findings or conclusions, requires specific criteria that assure the reader that what they are reading is believable (Patton, 2002; Lincoln and Guba, 1981, 1986). The researcher needs to demonstrate that in making methodological choices, and interpreting evidence, serious consideration has been given to the "validity *threat*: a way you might be wrong" (Maxwell, 2005, 106). Patton asserts that as qualitative enquiry employs a myriad of approaches, that the criteria by which quality and credibility are assured or measured in any enquiry, should be based on the purpose and audience of that research (2002).

Maxwell (2005) highlights two specific threats to validity; researcher bias (in terms of the subjectivity with which they approach data selection and analysis), and reactivity which is concerned with the influence a researcher has on the subjects, events or site of the research. In both cases he suggests that while some measures can be taken to reduce the threat, it is more productive to understand the impact or influence occurring and to demonstrate this in interpretation. While acknowledging that validity cannot be assured through any specific methods or processes, Maxwell advises that researchers demonstrate a commitment to the goal of validity and incorporate strategies for minimising validity threats and increasing the credibility of findings in their research design. He puts forward a checklist of strategies that he considers useful in the appropriate environments: Intensive,

Long-term Involvement; "Rich" data; Respondent Validation; Intervention; Searching for Discrepant Evidence and Negative Cases; Triangulation; Quasi-Statistics; Comparison (Maxwell, 2005, pp 110-114).

Patton identifies and defines five sets of criteria for judging quality based on different perspectives and philosophical frameworks: Traditional scientific research criteria; Social construction and constructivist criteria; Artistic and evocative criteria; Critical change criteria; and Pragmatic utilitarianism. Of these, the "Social Construction and Constructivist Criteria" (table 3.1 below), which draw heavily on Lincoln and Guba's conception of trustworthiness in naturalistic enquiry (1986) best suits my study. Trustworthiness as a "parallel to rigor" is constructed from "credibility as an analog to internal validity, transferability as an analog to external validity, dependability as an analog to reliability, and confirmability as an analog to objectivity" (Lincoln and Guba, 1986, pp 76-77; cited in Patton, 2002). Lincoln and Guba (1986) further emphasise the value of authenticity (acknowledging, respecting and appreciating multiple perspectives, including one's own) and dependability (commitment and adherence to an ordered, methodical approach) in ensuring the quality of naturalistic or qualitative research.

Constructivist Criteria
• Subjectivity acknowledged (discuss and take into account biases)
• Trustworthiness
• Authenticity
• Triangulation (capturing and respecting multiple perspectives)
• Reflexivity
• Praxis
• Particularity (doing justice to the integrity of unique cases)
• Enhanced and deepened understanding (verstehen)
• Contributions to dialogue

Table 3.1 Excerpt from Alternative Sets of Criteria for Judging the Quality and Credibility of Qualitative Inquiry (Patton, 2002, p 268)

Morse et al. (2002) argue that much of what is done in ensuring "trustworthiness" and the other quality measures discussed above, focuses on evaluating the resultant aspects of research, in the judging (or defending) of findings. Lincoln and

Guba (1981) do however clearly define actions that should be taken by researchers both during and towards the end of a study, as well as suggest the usefulness of trustworthiness in both guiding the design and evaluating the findings of research.

Like Maxwell, Morse et al (2002) suggest that researchers need to build such measures into the design of the whole qualitative research project, so that decisions that can impact greatly on the quality of results are considered and planned, and not taken without due regard for the possible ramifications. Verification strategies for "checking, confirming, making sure, and being certain" throughout the process, help to incrementally ensure a quality final product by alerting researchers to potential problems as they emerge (Morse et al, 2002). These strategies include methodological coherence, sample appropriateness, concurrent data collection and analysis, theoretical thinking, and theory development.

With the above in mind, I developed an approach to guide this study as shown in Table 3.2 below. The approach draws on Maxwell's strategies for minimising validity threats; Lincoln and Guba's concepts of trustworthiness, authenticity and dependability; Patton's Social Construction and Constructivist Criteria for judging quality; and Morse et al's verification strategies.

In the sections that follow the table, I further expand on some of the issues and approaches tabled above, particularly in respect to sampling, choice of data sources, data collection, data analysis and the presentation of the findings as a case study.

Concern	Goal	Relevant Guidelines & Recommendations	Approach Adopted
Trustworthiness	**Credibility** of research findings – want to create conditions for plausibility	• Prolonged engagement (Lincoln and Guba, 1981) • Intense, long-term involvement (Maxwell, 2005)	• Data collected over a 4 month period to enable a full picture of process to emerge not just a particular point in time • Researcher has been involved for several years with the course – so needs to be aware of focusing on this instance and not allow prior experience to shape judgment
		• Triangulation (Lincoln and Guba, 1981; Patton, 2002; Maxwell, 2005; and many others)	• Data drawn from at least 2 sources, of different types, for each research sub-question as far as possible • Data analysis done using both thematic and narrative analysis to develop different views of the data • Findings presented in several formats – student journeys, summary results for the research sub-questions, overall findings
	Transferability – ensure that findings provide sufficient depth and context in order to enable reader to determine transferability	• Thick description (Lincoln and Guba, 1981; Rule and John, 2011; and others)	• Detailed data collected from multiple perspectives to enable thick description • Findings are presented in several ways and from several perspectives so as to enable readers to feel a sense of "being there" and ensure the case study resonates with the reader
		• Purposive Sampling (Lincoln and Guba, 1981; Maxwell, 2005; Merriam, 2011; Rule and John, 2011)	• Sampling was planned in order to have as many different perspectives represented in the data as possible • Data was sorted and organised, and preliminary analysis determined the final sample set (described in 3.5.2.2)

Concern	Goal	Relevant Guidelines & Recommendations	Approach Adopted
		• "Particularity - doing justice to integrity of unique cases" (Patton, 2002)	• Individual journeys are portrayed in order to respect each participant's experience and perspective, rather than simply using them to contribute to conveying an overall impression
		• Crystallisation – a means by which to present the multi-facetness of a situation – examining the situation from several different aspects (van der Mescht, in Rule and John, 2011)	• Used multiple sources and approaches to analysis of a varied set of participants
	Dependability - want to create "stable" data. The "researcher as instrument" can result in "instrumental shifts" as perspectives change and insights are developed.	• Overlap methods (Lincoln and Guba, 1981)	• Used more than one approach to analyse data – narrative and thematic – within cases and across cases, and looked for similar results to emerge where appropriate
		• Document process and build an audit trail (Lincoln and Guba, 1981; Merriam,2011)	• Documented the approach, the analysis, changes in direction, as they occurred in research notes.
		• Researcher Reflexivity (Watt, 2007; Patton, 2002)	• Guided and inspired by Watt's work, I used the principle of reflexivity to continually monitor and guide my thinking and changes in direction.
	Confirmability – work towards findings based on data and interpretations that	• Triangulation – to ensure that researcher bias is tested by a broad set of data and methods (Lincoln and Guba, 1981; Maxwell, 2005)	• As detailed above

Concern	Goal	Relevant Guidelines & Recommendations	Approach Adopted
Researcher Bias (Maxwell)	minimise researcher bias or impact	• Intense, long-term involvement and collection of "rich data" (Maxwell, 2005) helps to ensure that the interpretations are fully grounded in data and not projected onto the data by the researcher	• As detailed above
Researcher Reactivity (Maxwell)		• Limit Reactivity – the impact that researchers have on their respondents and the data that they generate (Maxwell, 2005; Cohen et al, 2007)	• Used documents that have not been specifically created for the research purpose to avoid research impacting on the data
Authenticity	**Authenticity** of perspective	• acknowledging, respecting and appreciating multiple perspectives, including one's own (Lincoln and Guba, 1986)	• endeavoured to portray data and results from multiple perspectives and use multiple sources for analysis and interpretation of results
Dependability	**Dependability** of research approach and process	• commitment and adherence to an ordered, methodical approach (Lincoln and Guba, 1986)	• designed and documented the approach, guidelines, methods and techniques to be used in undertaking and reporting on this research

Table 3.2 Strategies to Ensure Quality and Credibility of the Research

3.5 Data Selection and Collection

The case study approach to research does not have particular methods of data collection or analysis that are unique to it, but rather selects the traditional methods that are best suited to a particular situation. In order to meet the requirement for detailed and trustworthy data mentioned above, several different types and sources of data, and various methods of data gathering were employed

in this study in order to achieve different perspectives on the questions asked. For each of the two main research questions, several sub-questions were posed, and in virtually every case, more than one source of data has been used, as discussed in section 3.7 Data Types, Sources and Methods of Collection.

In the following subsections I will define the case study as examined in this project, discuss and define the sample of students used as participants, and provide a detailed description and motivation for the data types, sources and methods of collection for each research sub-question of this study.

3.5.1 Defining the Case Study

The case study consists of a single cohort of second year IS students undertaking the first semester course, INFO2000, in 2010. The case study looks specifically at the perceptions and experiences of both the students and PDP facilitator (who is also the researcher) in terms of the PDP aspect of the course.

This is one instance of several classes of INFO2000 students who have completed the PDP and who present a representative picture of the PDP experience. They were chosen as the PDP has been slightly adjusted over the last couple of years and the version that the 2010 students completed has now remained unchanged for the last two years. Furthermore, in line with ethical considerations, a cohort that had completed their second year of study and had moved on would not be affected by any analysis revealed in the research as all assessment and finalising of marks for that class would be completed before the commencement of the data analysis.

3.5.2 Selecting and Defining the Sample of Research Participants

3.5.2.1 Establishing the Basis for Sampling

The total population of students in the defined case study was 48. In order to look in some detail and from different viewpoints at the perceptions and experiences of research participants, a sample of students was studied in some detail, rather than looking at the full class.

Since qualitative research in general, and the case study approach in particular, is not looking for statistical generalisation from the findings, probabilistic sampling is neither necessary nor even desirable (Merriam, 2011). Therefore, non-probabilistic or purposive sampling which involves deliberately choosing the sample of participants from the population based on their potential to contribute to fulfilling

the research purpose through answering the research questions (Rule and John, 2011) is generally adopted in qualitative studies. Patton (2002) asserts that "the logic and power of purposeful sampling lies in selecting *information-rich* cases for study in depth" and that "information-rich cases are those from which one can learn a great deal about issues of central importance to the purpose of the enquiry" (p 273, emphasis in original).

Maxwell (2005) prioritises four goals for purposeful selection that apply in various situations:

- representativeness of the sample – in terms of ensuring that the average or typical is included in the sample
- heterogeneity of the sample – ensuring that all variations across the population are included and considered
- critical cases – that support theories that initiated or emerged from the study
- comparison – including cases that can be used to illuminate or explain differences when needed or appropriate

Several different types of purposeful sampling have been defined including typical case, unique, maximum variation, convenience and snowball (Merriam, 2011), some of which overlap with Maxwell's purposes given above. In order to perform purposive or purposeful sampling, one needs to set the criteria by which the sample selection should be made, leading LeCompte and Preissle (1993, sited in Merriam, 2011), to argue for the term criterion-based selection rather than purposeful selection. A set of criteria and justification for their inclusion should be established guided by the purpose of the enquiry, and these then used to determine selection of the sample from the population (Merriam, 2011).

To further help in determining which and how many participants to include in the sample, Cohen, Manion and Morrison (2007) describe dimension sampling as a refinement of quota sampling (a non-probabilistic stratification sampling equivalent), in which various factors of interest in the overall population are identified, and sampling is done in order to ensure there is at least one participant representing each possible combination of factors in the final sample. This aligns in part with Maxwell's second goal of heterogeneity.

In the next section I describe the process through which the sampling was done, using the above discussion as a guideline. Detail is provided in order to establish an audit-trail as recommended by Merriam (2011) in support of credibility and dependability (Lincoln and Guba, 1981, 1986) in this study.

3.5.2.2 Sampling the Data

As discussed later in this chapter, ethical considerations dictated that informed consent would be used in obtaining potential participants for this study. All 48 students in the class consented to participate, meaning that sampling could be done from the full population.

Drawing on the above guidelines, purposive sampling was used in this study, taking into account Maxwell's goals of representativeness, heterogeneity, inclusion of critical cases and comparison (2005). Furthermore, as recommended by Merriam (2011) above, criteria relating to the purpose of the study were established both for identifying the specific participants, as well as the actual data sources (as discussed later in the chapter). Care was taken to ensure that information-rich data was available for all the chosen participants (Patton, 2002).

In this study, a set of quantitative data generated by the researcher (consisting of the whole population's marks for the various parts of the PDP together with their exam marks) was used to inform the sample. The data was used to rank the class by exam mark and divide the class into four groups; top, upper-middle, lower-middle and bottom, based on their final exam mark, in line with Cohen et al's dimension sampling (2007) in which achievement in exam marks relative to PDP marks was of interest. I had originally planned to divide the population into 3 equal groups, but after preliminary analysis of the quantitative data, I felt that the four groupings made more sense in terms of the types of experiences shown by the data.

The sampling was further informed by looking at the top 10 PDP achievers based on their PDP average over the three submissions as well as the top 10 PDP based solely on their final submission. This allowed me to identify which students had excelled in the PDP but who were not necessarily in the top 10 students based on exam results. I also identified those students who achieved in the bottom 10 of the class by PDP average. Thereafter, one or two participants from each group were selected to represent that set of students and any interesting (outlying) students were also included in the sample. These included students whose PDP achievements were markedly different from other students within the same group, or whose marks might have followed a different trend or pattern to others. This examination and selection therefore took into account Maxwell's goals of representativeness, heterogeneity, inclusion of critical cases and comparison (2005).

Student Achievement as Represented by their Marks for Individual Summative Assessments

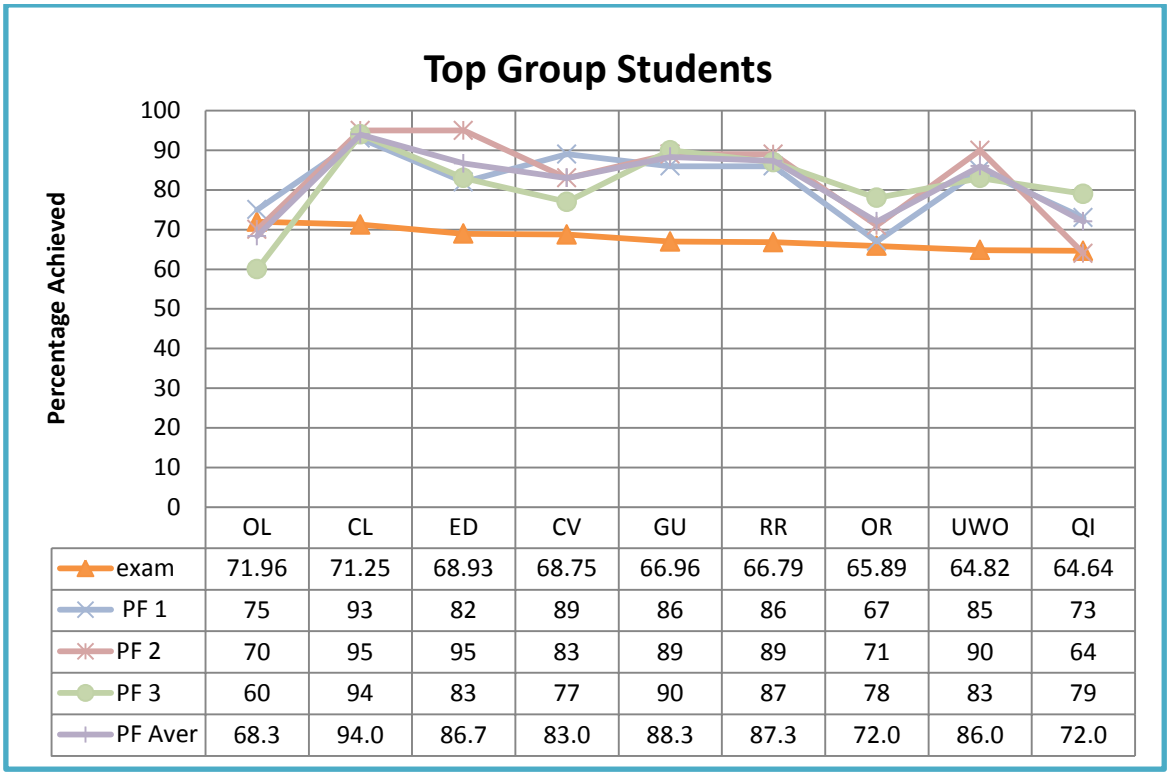
Students taking this semester long course are assessed through a variety of different tasks, including individual tests and exams, a group-based semester long project with a series of milestones, and the PDP. In order to identify students who would either be representative of a segment of the class i.e. the top achievers or borderline students, or stand out for some particular reason, a brief examination of their results was undertaken and used to segment the class into 4 sections based on their achievement in the final examination. While not the only approach available, I felt that looking at how groups of students who had achieved particular mark ranges in their final, high stakes summative assessment, might give me some insights into their achievements in the SDL based PDP.

Based on the full range of marks achieved across the class, the following 4 groups of students were created:

- **Top** – students achieving at least 65% for the final exam. The range of exam marks for this group was from 65 – 72% and comprised 9 students.
- **Upper Middle** – students achieving between 60 and 64% for the exam. This group contained 9 students.
- **Lower Middle** – this group was defined by students who achieved marks between a pass mark and 59%, and contained 17 students in total.
- **Bottom** – this group contained students who achieved less than 50% for their exam, though many of them still passed the course overall, provided that they had met the subminimum mark of 40% for the exam. There were 13 students in the group.

The Top Group

This group in general achieved very good marks across the three PDP portfolios with most marks in the 80s and 90s. Three of the students however achieved very different marks, with individual portfolios assessed at between 60 and 79%. Their un-weighted average across the three portfolios was between 68 and 72% and fell below the top third (or 16 students) of the class. One of these three students was the top achiever in the exam. The other six students achieved un-weighted averages across the three portfolios of between 83 and 94%, and were all placed within the top ten students overall by PDP portfolio average (see discussion below).



	OL	CL	ED	CV	GU	RR	OR	UWO	QI
exam	71.96	71.25	68.93	68.75	66.96	66.79	65.89	64.82	64.64
PF 1	75	93	82	89	86	86	67	85	73
PF 2	70	95	95	83	89	89	71	90	64
PF 3	60	94	83	77	90	87	78	83	79
PF Aver	68.3	94.0	86.7	83.0	88.3	87.3	72.0	86.0	72.0

Figure 3.1 Top Group Students

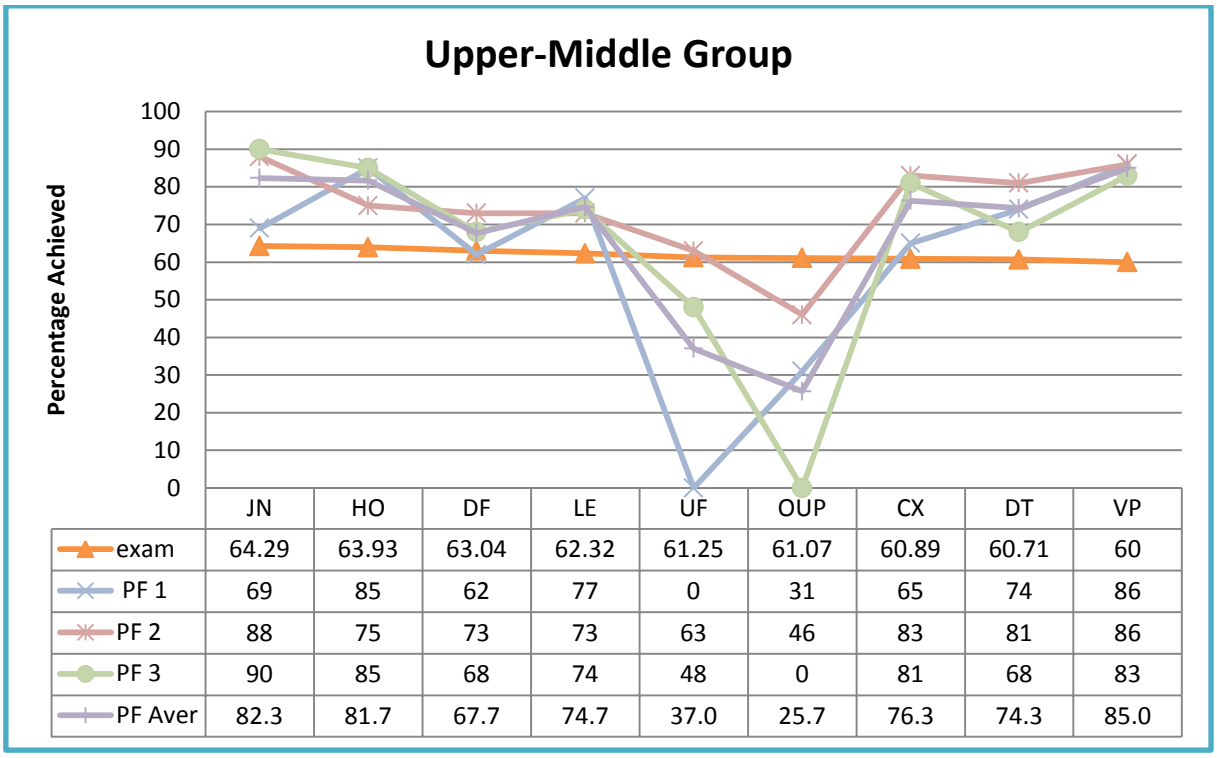
The Upper-Middle Group

While achieving lower exam marks than the Top-Group (between 60-64%) this group in general performed well in the portfolios, with two students achieving un-weighted averages across the three portfolios of between 85% and 82.3% placing them within the top ten students overall by PDP portfolio average (see discussion below), and a third student narrowly missing out with 81.6%. Of the remaining six students, four achieved un-weighted averages across the three portfolios of ranging from 67.6% to 76.3% and the other two achieved below 40% with each submitting only two of the three portfolios and achieving low marks on the ones that were submitted. The two lowest achievers placed within the bottom 10 students (see discussion below).

The Lower-Middle Group

This group achieved exam marks that ranged between 50 and 59%, and made up roughly a third of the class comprising 17 students. Three students from this group achieved excellent portfolio marks placing them in the top ten students by un-weighted averages across the three portfolios. Three students in this group placed in the bottom 10 students by un-weighted averages across the three portfolios (see

below), achieving 41.6%, 47% and 50.3%. The rest of the students achieved between 59.6% and 74.6%.

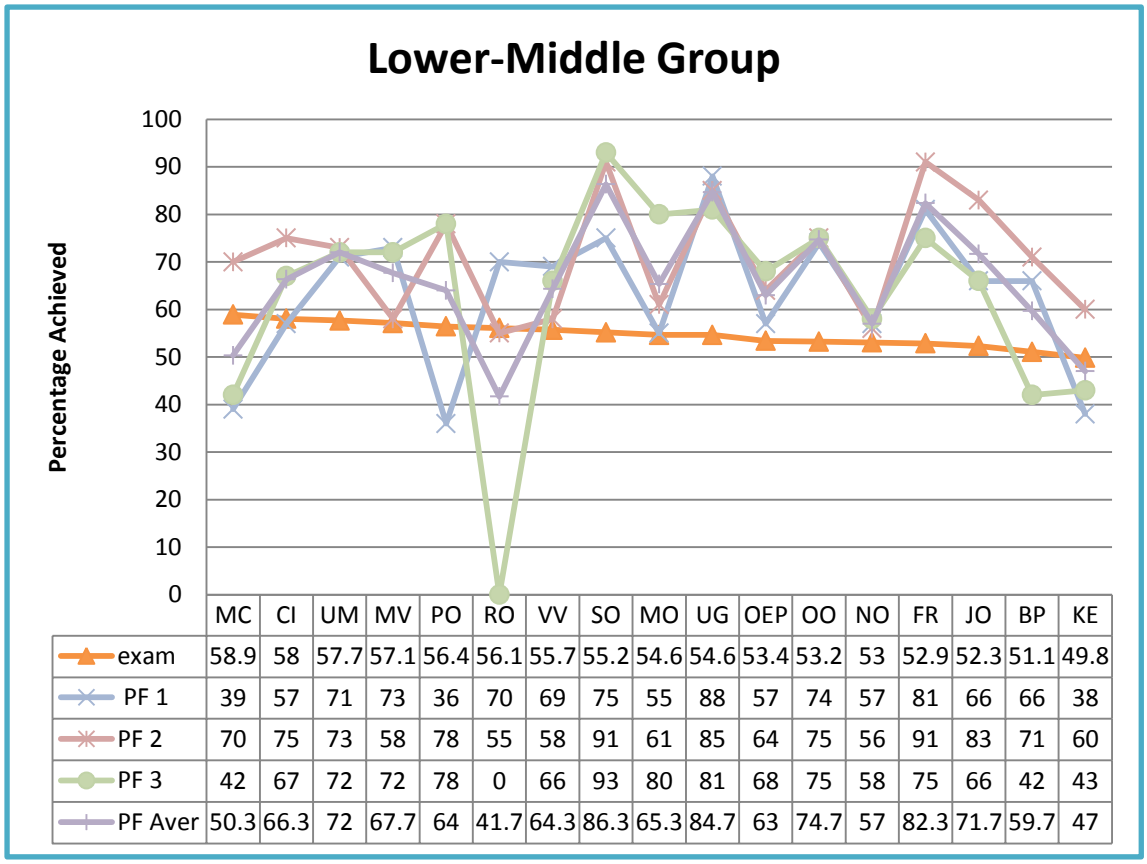


	JN	HO	DF	LE	UF	OUP	CX	DT	VP
exam	64.29	63.93	63.04	62.32	61.25	61.07	60.89	60.71	60
PF 1	69	85	62	77	0	31	65	74	86
PF 2	88	75	73	73	63	46	83	81	86
PF 3	90	85	68	74	48	0	81	68	83
PF Aver	82.3	81.7	67.7	74.7	37.0	25.7	76.3	74.3	85.0

Figure 3.2 Upper-Middle Group Students

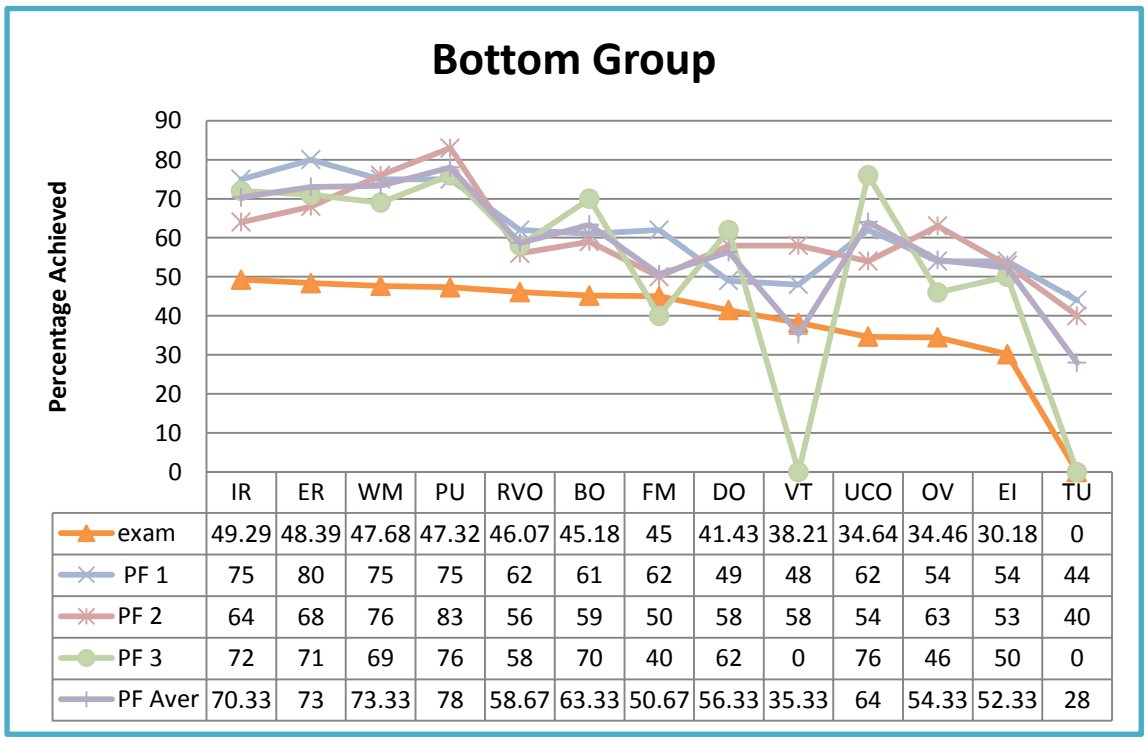
Bottom Group

This group contained thirteen students all of whom achieved marks below 50% for their final exam mark, with eight of the students passing the year overall as they achieved above the 40% subminimum mark for the exam. The other five failed the course. Interestingly, four students within this group achieved un-weighted averages across the three portfolios of between 70.3% and 78%, while a further two students obtained 63.3% and 64% respectively. Five students fell into the bottom 10 students by un-weighted averages across the three portfolios (see discussion below).



	MC	CI	UM	MV	PO	RO	VV	SO	MO	UG	OEP	OO	NO	FR	JO	BP	KE
exam	58.9	58	57.7	57.1	56.4	56.1	55.7	55.2	54.6	54.6	53.4	53.2	53	52.9	52.3	51.1	49.8
PF 1	39	57	71	73	36	70	69	75	55	88	57	74	57	81	66	66	38
PF 2	70	75	73	58	78	55	58	91	61	85	64	75	56	91	83	71	60
PF 3	42	67	72	72	78	0	66	93	80	81	68	75	58	75	66	42	43
PF Aver	50.3	66.3	72	67.7	64	41.7	64.3	86.3	65.3	84.7	63	74.7	57	82.3	71.7	59.7	47

Figure 3.3 Lower-Middle Group Students



	IR	ER	WM	PU	RVO	BO	FM	DO	VT	UCO	OV	EI	TU
exam	49.29	48.39	47.68	47.32	46.07	45.18	45	41.43	38.21	34.64	34.46	30.18	0
PF 1	75	80	75	75	62	61	62	49	48	62	54	54	44
PF 2	64	68	76	83	56	59	50	58	58	54	63	53	40
PF 3	72	71	69	76	58	70	40	62	0	76	46	50	0
PF Aver	70.33	73	73.33	78	58.67	63.33	50.67	56.33	35.33	64	54.33	52.33	28

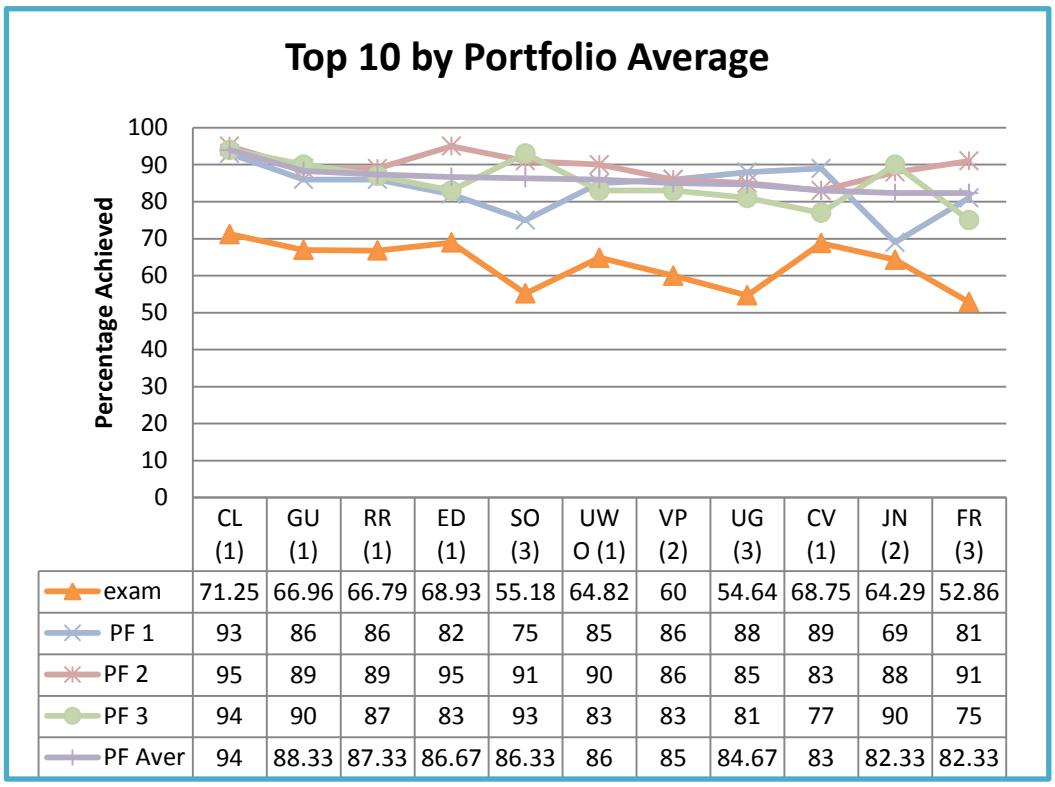
Figure 3.4 The Bottom Group

Student Achievement as Represented by their Marks on Average across the Portfolios and for Portfolio 3 alone

Taking a slightly different view of the class, I looked at who the ten best performers were based on an un-weighted average mark across the three portfolios, as well as based on just the final portfolio. This presented some interesting findings, and helped to feed into my choice of sampling

The Top Ten Students Overall by PDP Portfolio Average

The top ten students based on the overall average for the portfolios, included 11 students as two achieved the same average in 10th position. Of these students, six fell into the Top Group, two into the Upper-Middle, and three into the Lower-Middle Group. The average mark ranged between 82 and 94%.



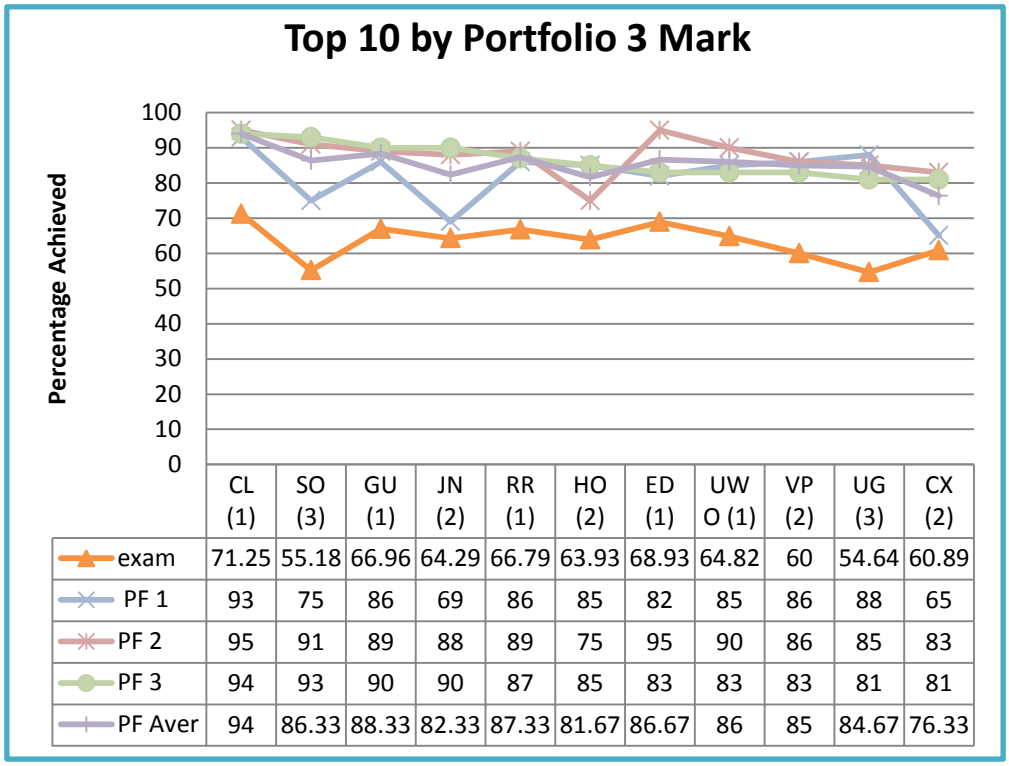
	CL (1)	GU (1)	RR (1)	ED (1)	SO (3)	UW O (1)	VP (2)	UG (3)	CV (1)	JN (2)	FR (3)
exam	71.25	66.96	66.79	68.93	55.18	64.82	60	54.64	68.75	64.29	52.86
PF 1	93	86	86	82	75	85	86	88	89	69	81
PF 2	95	89	89	95	91	90	86	85	83	88	91
PF 3	94	90	87	83	93	83	83	81	77	90	75
PF Aver	94	88.33	87.33	86.67	86.33	86	85	84.67	83	82.33	82.33

Figure 3.5 Top 10 Students by Average Portfolio Mark

Top Ten Students by PDP Portfolio 3 Mark

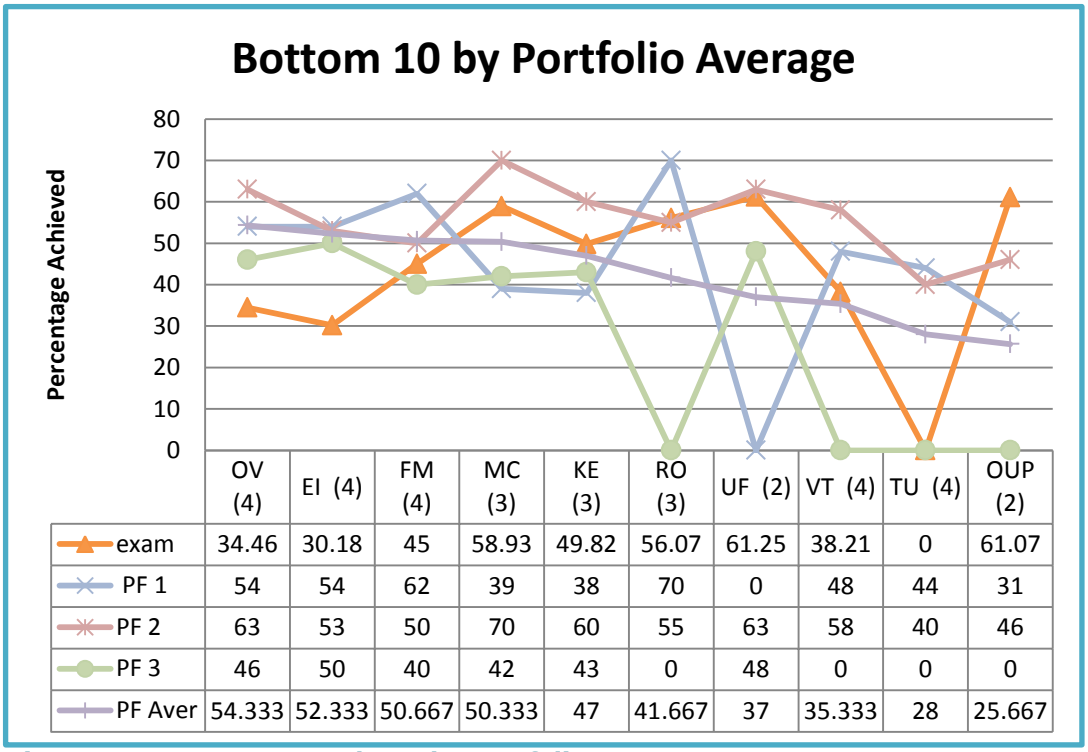
Looking at the ten best performers based only on their final portfolio submission again produced 11 students with a tie for 10th position, but this group differed slightly in terms of the order of positions, and included two different students to the

other group. Of these 11 students, five fell into the Top Group, four into the Upper-Middle, and two into the Lower-Middle Group, with an average of 81 to 94%.



	CL (1)	SO (3)	GU (1)	JN (2)	RR (1)	HO (2)	ED (1)	UW O (1)	VP (2)	UG (3)	CX (2)
exam	71.25	55.18	66.96	64.29	66.79	63.93	68.93	64.82	60	54.64	60.89
PF 1	93	75	86	69	86	85	82	85	86	88	65
PF 2	95	91	89	88	89	75	95	90	86	85	83
PF 3	94	93	90	90	87	85	83	83	83	81	81
PF Aver	94	86.33	88.33	82.33	87.33	81.67	86.67	86	85	84.67	76.33

Figure 3.6 Top Ten Students by Portfolio 3 Mark



	OV (4)	EI (4)	FM (4)	MC (3)	KE (3)	RO (3)	UF (2)	VT (4)	TU (4)	OUP (2)
exam	34.46	30.18	45	58.93	49.82	56.07	61.25	38.21	0	61.07
PF 1	54	54	62	39	38	70	0	48	44	31
PF 2	63	53	50	70	60	55	63	58	40	46
PF 3	46	50	40	42	43	0	48	0	0	0
PF Aver	54.333	52.333	50.667	50.333	47	41.667	37	35.333	28	25.667

Figure 3.7 Bottom 10 Students by Portfolio Average

Bottom Ten Students Overall by PDP Portfolio Average

Finally, I examined the picture from the bottom up, looking at the lowest ten average marks across the three portfolios. These students achieved averages ranging between 26 and 55%, with the lowest five students all failing to submit at least one of the portfolios thereby skewing their average badly. This group had two students falling into the Upper-Middle Group, three students in the Lower-Middle group, and five from the Bottom Group.

3.5.2.3 The Sample of Students

Using the above analysis and in line with my strategy of purposive sampling, I chose eight students to represent the various SDL journeys undertaken by the students of this class. Prior to selecting the final sample of students, the data for the full sample was sorted and checked in order to identify the level of completeness of data for each student. Unless the lack of good data was in itself evidence of a student's experience, specific students were selected from amongst the most suitable based on a complete and rich set of data (Patton, 2002).

The following students make up my final sample:

ED – drawn from the Top Group, ED represents the high achieving group in terms of both exam and portfolio work.

OL – drawn from the Top Group, OL achieved the highest mark for the exam, but is not representative of the level of achievement in portfolio work for this group, placing 25th in class based on the un-weighted portfolio average.

JN – drawn from the Upper-Middle Group but also featuring in both the best average across the three portfolios and in the best portfolio 3 groups, JN represents the majority of the students in the Upper-Middle group who achieved strongly in the PDP portfolios.

UF – drawn from the Upper-Middle Group, UF performed poorly in the portfolios, placing in the bottom 10 by average, and is therefore included to provide for variance in the Upper-Middle group.

UG – drawn from the Lower-Middle Group but also featuring in both the best average across the three portfolios and in the best portfolio 3 groups, UG represents the 3rd of the total of 16 students in the Upper-Lower group who

achieved strongly in the PDP portfolios, while achieving exam marks spread across the range between 50 and 59%.

CI - drawn from the Lower-Middle Group, CI represents the 3rd of the total of 16 students in the Upper-Lower group who achieved fairly well in the PDP portfolios, while achieving exam marks spread across the range between 50 and 59%. This SDL journey started slowly but continued demonstrably beyond the course.

KE – drawn from the Lower-Middle Group but also featuring in the group of students that achieved the lowest overall average for their PDP portfolios, KE completed all three portfolios but seemed to battle with progress on his journey, representing several students in the Lower-Middle Group as well as those from the Bottom Group who completed all their portfolios.

PU – drawn from the Bottom Group, PU achieved below 50% for the exam and yet achieved an average of 78% for the portfolios, representing over a third of the bottom group who achieved very good portfolio marks.

Table 3.3 summarises the sample of students and justification for their inclusion.

Group	Student	Exam Mark %	PF 1 Mark %	PF 2 Mark %	PF 3 Mark %	Average Portfolio Mark	Top Ten Average Portfolio	Top Ten PF 3	Bottom Ten Average Portfolio
Top (9)	ED	68.9	82	95	83	86.6	✓	✓	
	OL	71.9	75	70	60	68.3			
Upper-Middle (9)	JN	64.3	69	88	90	82.3	✓	✓	
	UF	61.2	0	63	48	37			✓
Lower-Middle (17)	UG	54.6	88	85	81	84.6	✓	✓	
	CI	58.0	57	75	67	66.3			
	KE	49.8	38	60	43	47			✓
Bottom (13)	PU	47.3	75	83	76	78			

Table 3.3 Student Sample for Study

3.6 Data Types, Sources and Methods of Collection

As indicated above, several different types and sources of data were used in examining this case study. This section will justify how the data sources were chosen, describe the various types and sources of data, and identify how these were used to tell the stories of the students' journeys in such a way as to allow for the investigation of the case study's main and sub-research questions.

Returning to Merriam's (2011) suggestion that purposeful sampling needs to have a set of criteria in order to identify appropriate participants, so too should criteria be applied in terms of determining which data should be used. As stated previously, the purpose of this enquiry is twofold; firstly aiming to evaluate the PDP as a specific SDL intervention in terms of the opportunity it provides the students to develop the skills, attributes and values required to succeed as self-directed lifelong learners, and secondly, to examine the potential relevance and contribution that adapted change management and organisational development theories and frameworks can make towards mediating the change introduced by the PDP.

The criteria for data selection therefore include the need for data that allows for the examination of the PDP both in terms of its design intentions and the students' experience, progress and achievements. In particular evidence is needed of the opportunity for developing skills, attributes and values relating to SDL, and the acquisition of these by students. Secondly data indicating reactions and responses to change must be collected. The use of sub-questions for each of the two main research questions helped to identify the types and sources of data best suited to answering the two main research questions.

Rule and John (2011) talk of sufficiency in determining how much data is required to fill a case study. They describe how "the key features of case study research: depth – portrayal of substance, richness and subtlety; holism – portrayal of multifacetedness and connectedness; liveliness – portrayal of 'a sense of being there' " help to influence and determine what data must be collected and when the data is sufficient (p 72).

The following sections describe the various sources and types of data, and how they were collected and used. Table 3.4 that follows the descriptions provides a summary of the data collection strategy used.

3.6.1 Researcher Generated Documents

As described earlier in this chapter, a set of quantitative data for the entire class population relating to the students' marks for their final course exam and the three parts of the PDP were available and used in this research. This type of data which is assembled and organised by the researcher during the research project in order to learn more about or better understand the object of enquiry is described by Merriam (2011) as researcher generated documents.

While quantitative in nature, this data was used in a descriptive way to provide an overall view of student achievement in the class, to indicate possible trends or patterns in student achievement, and to provide a basis by which to perform purposive sampling as described above.

A further set of population-wide researcher generated data was also used in the study to provide an overall context for the above data sources. This data originates from a student survey that formed part of each of the three PDP submissions. It consists of a series of closed questions relating to the students' feelings relating to doing each PDP submission. The data is also more quantitative in nature and was again used descriptively to provide a summarised and wider view of the particular issues being explored.

This data will not play a major role in answering the specific research questions, but will be used descriptively to provide context and background for several sub-questions (see appendix A).

3.6.2 Participant Sourced Data

Participant sourced data makes up the majority of the qualitative data set for this research project. The data comprises a variety of student submissions for the PDP including learning contracts (initial, revised and final versions), various reflective writing pieces done over the course of the semester that respond to particular questions or issues related to doing the PDP, portfolios of evidence demonstrating learning and accomplishments for the PDP, and learning journals.

Cohen et al (2007) include both journals and "samples of students' work" in their discussion on documentary research, and suggest that the possible benefits associated with these are: "little or no reactivity on the part of the writer, particularly if the document was not written with the intention of being research data" (p 201); evidence of change over a period of time; the dynamics of a situation at a point in time if the documents are written " 'live' and *in situ*" (p 201);

and the surfacing of "personal details and feeling" which might otherwise not be drawn out. On the other hand, care must be taken to view the documents in the context in which they have been written; with due regard to issues of writer perspective and bias; and taking into account selectivity of inclusion of content and the resulting completeness of the "picture" obtained (Cohen et al, 2007).

The journals and reflective writing pieces are essentially narratives or excerpts of life stories in which the writers convey their interpretation of what has happened and make meaning of the events and experiences which they describe. In this sense they interpret what has happened rather than faithfully reproduce it (Riessman, 2003). From a social constructivist point of view then, the factual truth of the narratives is less important than the possibility of "understanding the changing meaning of events for the individuals involved" (Riessman, 2003, p 20).

This participant data provides several different perspectives by which to answer the research sub-questions. Evidence of what students have actually accomplished is present in their submitted work (learning contracts, portfolios of evidence, etc.). Their views or beliefs of what they have accomplished is evidenced in their reflective writing, progress claimed in learning contracts and portfolios of evidence, and journal entries, and so on. Finally, their feelings and emotions as reported in their reflective writing and learning journals provides another perspective on the PDP experience.

In the section on data analysis later in this chapter, I describe and demonstrate how each source of data is analysed (using either thematic or narrative analysis as appropriate) and further show how I looked for evidence in various aspects of students' work which could be woven into each student's story in order to provide a detailed understanding of the issues raised by the research questions.

3.6.3 Document Based Data

Document based data was also used in this research, in particular to examine the specifications and assessment criteria for the PDP in terms of their design to elicit, develop or support self-directed learning knowledge, skills or attributes. These documents include the PDP requirement specification documents and marking guidelines for the three portfolios, and are attached as appendix B.

3.6.4 The Final Data Portfolio

The data described above was collected across the sample of participants or full population of students as appropriate, and across the full time period of the PDP. This created a portfolio of data available for analysis which consisted of data profiles for each of the participants as well as case study wide data. Table 3.4 below provides an overall view of the final data portfolio and where it was used in this project.

3.7 Data Analysis and Presentation of Findings

The value of a case study beyond the researcher and their particular interest should be in the way in which readers connect to and identify with the story, and are able to transfer some of its findings to their own experiences. Rule and John describe "*reader-determined transferability*" as that which "relieves the researcher of the burden of such [transfer] claims" and instead relies on the thick description of the case and its context to convey this sense of involvement and understanding. The case might then "resonate with other cases familiar to the reader" (Rule and John, 2011, p 105). The presentation of a case study therefore needs to paint a detailed and rich picture of the case within its context, constructed from all the available data and viewed from many different, yet relevant perspectives. These varying facets will reflect different views of the case study, conceptualised by van der Mescht as crystallisation (Rule and John, 2011). This requires that the story that is told gives voice to more than just the researcher, and other voices are heard in the telling of the whole.

My choices in investigating and presenting the case study have evolved over time, helped in part by Watt's (2007) discussion on researcher reflexivity and using a research journal to explore and record my thoughts and decisions. Having begun the early analysis of my data, I found myself going in circles when deciding how to work with the data, what analysis techniques to choose and use, how to actually go about ordering my thoughts and working on the data, and how all of these decisions would impact on the possibilities of the story I would eventually be able to tell.

Using a reflective research journal, Watt's (2007) work, my discussions with and feedback from my supervisor, my reading on ensuring quality and credibility, and some relevant studies and PhD reports (Richmond, 2002; Semmer, 2007; Grobler, 2006) as guidance, my analysis strategy gradually emerged and evolved in a

Research Questions	Research Sub-Questions		Data Sources						
			Portfolio Reflective Writing	Learning Journals	Learning Contracts	PDP Require-ments Document -	Portfolio of Evidence	Marking memos	PDP Surveys
Question 1 In what ways does the Personal Development Portfolio (PDP) provide students with exposure to, and learning opportunities through which to develop self-directed learning skills, attributes and values?	a.	What is the perceived value and importance of self-directed learning to the student participants as it relates to their future careers?	✓	✓	✓		✓		
	b.	What, if any, learning opportunities did the PDP provide for developing skills necessary for successful SDL?			✓	✓		✓	
	c.	What evidence if any of development of these skills emerged over the course of the PDP?	✓	✓	✓		✓	✓	
	d.	What indication if any of the values and attributes necessary for successful SDL was observed in student participant behaviour or expressions in completing the PDP?	✓	✓			✓	✓	✓
	e.	What aspects of the PDP encouraged the emergence or development of these values and attributes?	✓	✓		✓	✓		
	f.	What perceived benefits did students identify as arising from participation in the PDP?	✓	✓					
	g.	To what did they attribute these benefits?	✓	✓					
Question 2 What contribution can the application of change management and organisational development principles, theories and frameworks make towards mediating the change inherent in the previously unfamiliar pedagogical approach of Self-Directed Learning, thereby facilitating student adaptation and success?	a.	What concerns and fears did students experience when encountering SDL initially and as they progressed through the PDP?	✓	✓					
	b.	What aspects of the PDP did the students find most difficult or challenging?	✓	✓	✓		✓	✓	✓
	c.	In what ways did individual students react to or experience change relating to the introduction of the unfamiliar SDL approach?	✓	✓	✓		✓		✓
	d.	What aspects of the process or structure of the PDP supported student progression and successful completion?	✓	✓	✓	✓	✓		✓
	e.	What aspects of student difficulty could have been limited by implementing change management principles?	✓	✓	✓	✓	✓		✓
	f.	What aspects of structure or process in the PDP could benefit from the application of change management principles or techniques?	✓	✓	✓	✓	✓		✓

Table 3.4 Data Portfolio for Study

somewhat iterative and cyclic manner to allow my chosen form of case study to take shape. This confirmed for me the many claims that qualitative research methodologies and studies are emergent by nature, as my early ideas and plans were moulded and shaped by the study as it progressed. In the sections that follow, I describe the approach taken in presenting the findings of this study and thereafter present the data analysis strategy and implementation used in support of this.

3.7.1 Presenting the Findings

This research set out to evaluate the PDP as a SDL experience in terms of the learning opportunities it created for students to develop SDL skills, attributes and values, and furthermore to explore the possible contribution that change management and organisational development principles, theories and frameworks make towards mediating the educational change. To do this a case study approach was adopted to analyse one specific instance of the course, using a set of purposely chosen participants and drawing on several different types and sources of data.

In order to present the findings I adopted the following approach: firstly the background and context of the study are described as a basis through which to introduce the individual stories of the participants' SDL journeys. These stories or narratives are presented in chapter 4, and were constructed from the various sources of data available, and give voice to both the student and myself as researcher in each case.

Thereafter, in chapter 5, I undertake and present a document analysis of the PDP to determine the opportunities for student engagement in SDL activities. This is followed by a cross-case picture drawn from looking across all the individual SDL journeys in which I examine themes emerging from the individual stories against the research sub-questions of this study.

Finally, in order to conclude the research and close the case study, I develop and summarise overall findings relating to the two guiding research questions for this study, identify contributions made by this study, and acknowledge and discuss limitations. Rule and John (2011) however suggest that one should not necessarily finish by closing a case as one cannot really say that one has reached the end of the enquiry. Instead they suggest reopening the case, asking "So what?" and "What next?" (p132). Here the researcher should try to look beyond the case in the particular and identify its possible relevance in the wider set of cases of which it is an instance or example. Possible contributions to theory, practice and policy can be explored, and avenues for future

research suggested. In this report I complete chapter 6 by putting forward areas in which I would like to extend this work beyond this project.

3.7.2 Data Analysis Strategy

In order to tell both the individual stories of the participants as well as develop an overall picture of the case from which the main research questions could be examined, I undertook two iterations of analysis. Firstly all the data relating to each participant was analysed individually case-by-case, and thereafter a cross case analysis was done to build the bigger picture using thematic development.

3.7.2.1 Analysing the Individual Cases

The data available for each participant's story or narrative consisted of a mix of sources as described earlier: learning contracts, reflective writing pieces, initial job research and self-analysis in PDP1, portfolios of evidence, marking memos, PDP surveys and learning journals. These constituted two distinct types of data – those which reflect the student's voice in describing or narrating their SDL journey and those which have been assessed and evaluated, and demonstrate the students' progress from the researcher's perspective.

Narrative Analysis – The Stories told by the Student Participants

I analysed the data representing the students' voices, aspects of the learning contracts, their SWOT analyses and discussions, reflective writing pieces and journals, using narrative analysis. In narrative analysis, we are interested in tracing the story of an experience as understood, constructed and told by the participants. These stories are therefore not fictional, but the 'facts' are a reflection of the narrator's point of view as opposed to other versions of the truth (Lauritzen and Jaeger, cited in Richmond, 2002).

Riessman (2003) suggests that narratives do not mirror the past (what happened) but rather refract it. She believes that the usefulness of narrative accounts is in the interpretation of what happened, as this can reflect the influences on the participant in how they made meaning of the events as well as reveal the imagination and strategic choices of the participant in terms of what they say. Denzin (1994) describes this as the psychological approach to analysing narratives, concentrating on the personal aspect of the story, particularly thoughts and motivation. He describes the approach further as "[it] emphasizes inductive processes, contextualized knowledge and human intention ... [It] is holistic in that it acknowledges the cognitive, affective and motivational dimensions of meaning making" (p 287).

Narratives are stories and convey the content within a temporal structure that can include all the usual elements of stories: "characters, setting, events, action directed towards goals ..." (Richmond, 2002). Using a narrative or story map enables the decomposition of a story into elements (Richmond, 2002; Semmer, 2007; Grobler, 2006) that "reveal a particular case in a certain time or place" (Semmer, 2007, p 62). Narrative maps are constructed to identify important elements of the stories across the majority of a set of stories told, over a period of time. The elements to be investigated are drawn from both the common elements of stories (characters, and so on) as well as from the frameworks guiding a particular study.

The story or narrative map as adapted for this study is given in Table 3.5 below.

SDL Stage	Main Character	The Plot or Storyline	Other Characters	Complicating Factors
Beginning	The student as emerging SDL with skills, values, attributes Roles played (hero, victim, champion,..)	Events, Actions, Decisions, Successes, Failures	Team Members, Class Members, Facilitator & their effect on the story	Team Project University Life Family Life Work Life
Middle				
End				
Future				

Table 3.5 Adapted Narrative Map

Several different organising models of narrative analysis exist, including thematic, in which the content of the text is important (what is said, rather than how it is said); structural, which focuses on the classic elements of a story (characters, plot, etc.); interactional in which the dialogue between the story teller and listener is emphasised, and performance in which the story telling involves a performance of roles beyond the simple telling of the story (Riessman, 2003).

Rule and John (2011) suggest that all narratives have an element of the performance about them as the story goes beyond representing the content, to include the development of understanding the story and its narrator as part of a social world in which characters, plots and action all play a part. Cussins too (cited in Riessman, 2003) describes personal narratives as containing performative features, claiming that these allow for the "local achievement of identity". Analysing the chosen "social positioning" of narrators in relation to the plot, other characters, events etc. in a specific story gives us a sense of the narrator's situational position or identity. "Fluid positioning, not fixed roles, are used by people to cope with situations they find themselves in" (Harre and van Langenhove, cited in Riessman, 2003). A shift in identity often occurs at a turning point in a story, and events and experiences both past and present might take on very

different significances in light of the new identity of the narrator (Riessman, 2003; Mishler, cited in Riessman, 2003).

In approaching the analysis of this case I was interested in both a thematic analysis of the stories as well as the performance aspect, in order to understand how the participants understood their story in a social context, how they positioned themselves within their story of SDL, and how their position or role changed in response to their unfolding story over the course of their SDL journey.

Thematic Analysis – The Stories as Revealed by the Student Participants' Work

Completing the data portfolio reflected in each student's story are the data sources that do not reveal the student's voice in describing their journey as SDLs, but rather represent their achievements, successes and difficulties through their submitted portfolio work. I interpreted these data sources using thematic analysis and interwove this with the narrative analysis of the participants' perspectives to provide a more textured picture than is possible from one type or source of data.

The thematic analysis was carried out using both predetermined and emergent coding. Codes were drawn from the literature and conceptual frameworks discussed in chapter 2, with the goal of identifying relevant evidence in exploring the issues raised by the research sub-questions and main questions. These codes were further used in the cross case analysis process.

The evidence identified in the students' work submissions and the assessment sheets was incorporated into the narrative map for each student, bringing in my voice as a narrator. This narrative account for each of the participants is presented in chapter 4. In each case, the student's journey is traced from an initial starting point, through the highs, lows, successes and failures of their journey, to their final submissions. The stories draw on all the data sources in order to portray a detailed picture of each individual's experience. Verbatim extracts are used where appropriate to highlight issues or provide general or specific examples.

When approaching both the narrative and thematic analysis of all the data sources I used a cyclic and iterative approach. I began by reading each student's story from start to finish, making notes or highlighting themes or potentially interesting extracts as I went. I started out by identifying their chosen dream job or career as required in portfolio 1, together with their development goals and strategies. I did this in order to provide a background or context to their journaling and portfolio pieces. Having done this, I read their journal entries for each particular phase followed by their portfolio

submission for that phase which would have been completed at the end of each phase. This allowed me to trace their thoughts and actions during this time, and then see how this was translated into their work submission. I did this for each of the three phases. Once I had completed this initial reading, I repeated the same process, with the benefit of hindsight and in this iteration started completing the storymap for the student. Having done this, I mentally created and retold the student's story and checked it against the story map I had created. Where there were gaps or uncertainties, I went back to the data. Once this was done, I wrote the narrative for the student, using the story map and original documents to guide me. Each student's story was done from start to finish before I started on the next student, but occasionally one student's story would raise a question in my mind about another's, and I would return later to resolve it.

Table 3.6 below, details the approach used to guide the thematic analysis.

3.5.2.1 Analysing across the Individual SDL Journeys

No single story of a self-directed journey in this study, however interesting or important in its own right, can provide sufficient detail or shed sufficient light on the experience for us to be able to generate any worthwhile findings relating to either of the two main research questions or any of the guiding sub-questions. However, using the stories of the eight purposely chosen participants in a cross-case analysis to identify recurrent themes and patterns creates a collage of experiences from which responses to both the research sub-questions and the main research questions could be generated. Ferdman (cited in Richmond, 2002) suggests that the existence of repeated storylines or patterns of behaviour across a set of narratives can help illuminate both concepts and "the interrelationships between collective and individual experience and behaviour" (p 185).

The results of the cross-case analysis are guided by the table below and presented in response to the research sub-questions in chapter 5.

Q 1 Sub-questions		Theme(s)	*Data Sources to be Analysed*
a.	What is the **perceived value** and **importance** of **self-directed learning** to the student participants as it relates to their **future careers**?	SDL in future (IS) careers • Perceived Value – know how to learn, self-learn in rapidly changing industry, ability to change careers, career advancement • Perceived Importance – half-life of knowledge, rapid and constant change in IT and society, continuing professional development, project nature of IS, *General: Houle(1992); Dublin (1972); Frandson (1980); Livneh (1988); Candy, Crebert and O'Leary (1994); Knapper and Cropley (2000);* *IS: McMurtrey et al. (2008); Ross and Ruhleder (1993, cited in Turner, 2004)* *Various policy documents (see chapter 2)*	*Reflective Reviews (RR1, RR2, RR3)* *Learning Journals (LJ)*
b.	What, if any, **learning opportunities** did the PDP provide for developing **skills necessary** for successful SDL?	Based on the authors referenced below, the following skills were identified: i. Able to self-analyse level of knowledge and/or skills in a context ii. Able to identify gap in required knowledge and skills in a context iii. Able to define and plan a learning goal or task, including: iv. Identifying, analysing and using appropriate a. Resources b. Strategies and approaches v. Specify appropriate means by which to: a. Demonstrate or communicate acquired skills or knowledge b. measure and evaluate success vi. Reflect on learning goals/task in terms of a. Personal achievement b. Appropriateness for purpose Brookfield (1985); Candy (1991); Candy, Crebert and O'Leary (1994); Duffy and Bowe (2010); Garrison (1997), Guglielmino and Guglielmino (2003), Hiemstra (1994); Knapper and Cropley (2000); Knowles (1984); Schön (1991)	*Portfolio 1, 2 and 3 Requirements Documents (PF1r, PF2r, PF3r in appendix B)* *Portfolio 1, 2 and 3 Feedback and Assessment Documents (PF1f, PF2f, PF3f in appendix B* *Learning and Development Contract Template (LCtmp in appendix B)* *Updates and Feedback from PF1 and PF2 (PF1&2uf in Appendix B)*

Q 1 Sub-questions		Theme(s)	*Data Sources to be Analysed*
c.	What evidence, if any, of development of these skills emerged over the course of the PDP?	From the above, evidence of the following were looked for: i. Self-analysis at the level of knowledge and/or skills in this context ii. Appropriately identified gap(s) in required knowledge and skills in this context iii. Definition and planning of learning goals or tasks, including: iv. Identifying, analysing and using appropriate a. Resources b. Strategies and approaches v. Specification of appropriate means by which to: a. Demonstrate or communicate acquired skills or knowledge b. Measure and evaluate success vi. Reflection on learning goals/task in terms of a. Personal achievement b. Appropriateness for purpose	*Portfolios 1, 2 and 3 (PF1, PF2, PF3)* *Reflective Reviews (RR1, RR2, RR3)* *Learning Journals (LJ)*
d.	What indication if any of the **values** and **attributes** necessary for successful SDL was **observed** in student participant behaviour or expressions in completing the PDP?	i. Felt needs ii. Reflective learners/practitioners: • Appropriate aspects • Honesty • Positive and negative • Planning for future iii. Self-direction • Self-management – willingness and ability to drive own learning • Self-determination – personal autonomy iv. Self-awareness • knowledge, skills, • learning styles • level of achievement, • level of effort Brookfield (1985); Candy (1991); Candy, Crebert and O'Leary (1994); Duffy and Bowe (2010); Hiemstra (1994); Knapper and Cropley (2000); Knowles (1984); Schön (1991)	*Portfolios 1, 2 and 3 (PF1, PF2, PF3)* *Reflective Reviews (RR1, RR2, RR3)* *Learning Journals (LJ)*

Q 1 Sub-questions		Theme(s)	*Data Sources to be Analysed*
e.	What aspects of the PDP encouraged the emergence or development of these values and attributes?	i. Felt needs ii. Reflective learners/practitioners: • Appropriate aspects • Honesty • Positive and negative • Planning for future iii. Self-direction • Self-management – willingness and ability to drive own learning • Self-determination – personal autonomy iv. Self-awareness • knowledge, skills, • learning styles • level of achievement, • level of effort	*Portfolio 1, 2 and 3 Requirements Documents (PF1r, PF2r, PF3r in appendix B)* *Portfolio 1, 2 and 3 Feedback and Assessment Documents (PF1f, PF2f, PF3f in appendix B)* *Learning and Development Contract Template (LCtmp in appendix B)* *Updates and Feedback from PF1 and PF2 (PF1&2uf in appendix B)*
f.	What perceived benefits did students identify as arising from participation in the PDP?	Emergent themes to be identified through thematic and narrative analysis	*Portfolios 1, 2 and 3 (PF1, PF2, PF3)* *Reflective Reviews (RR1, RR2, RR3)* *Learning Journals (L J)*
g.	To what did they attribute these benefits?	Emergent themes to be identified through thematic and narrative analysis	*Portfolios 1, 2 and 3 (PF1, PF2, PF3)* *Reflective Reviews (RR1, RR2, RR3)* *Learning Journals (L J)*

Q 2 **Sub-questions**	Theme(s)	*Data Sources to be Analysed*
a. What concerns and fears did students experience when encountering SDL initially and as they progressed through the PDP?	Emergent themes to be identified through thematic and narrative analysis	*Reflective Reviews (RR1, RR2, RR3)* *Learning Journals (LJ)*
b. What aspects of the PDP did the students find most difficult or challenging?	Emergent themes to be identified through thematic and narrative analysis	*Portfolios 1, 2 and 3 (PF1, PF2, PF3)* *Reflective Reviews (RR1, RR2, RR3)* *Learning Journals (LJ)*
c. In what ways did individual students react to or experience change relating to the introduction of the unfamiliar SDL approach?	Emergent themes to be identified through thematic and narrative analysis Grief and loss - Kübler-Ross (2008), Carr (2001), Elrod II & Tippett (2002) Loss of identity - Strickland (2000, as cited in van Schoor, 2003) Loss of mastery - Moran & Brightman (2001) Resistance due to uncertainty (Carnall, 2003), Trader-Leigh (2002)	*Portfolios 1, 2 and 3 (PF1, PF2, PF3)* *Reflective Reviews (RR1, RR2, RR3)* *Learning Journals (LJ)*
d. What aspects of the process or structure of the PDP supported student progression and successful completion?	Emergent themes to be identified through thematic and narrative analysis "Eight Step Model for Transforming Your Organisation" - Kotter(1995) "Ten Commandments for Executing Change" - Kanter et al (1992) Readiness and Readiness Messages - Armenakis et al (1993), Armenakis and Harris (2002), Personal compacts – Strebel (1996), Duck (1993) ADKAR model – Hiatt (2006)	*Portfolios 1, 2 and 3 (PF1, PF2, PF3)* *Reflective Reviews (RR1, RR2, RR3)* *Learning Journals (LJ)* *Portfolio 1, 2 and 3 Requirements Documents (PF1r, PF2r, PF3r in appendix B)* *Portfolio 1, 2 and 3 Feedback and Assessment Documents (PF1f, PF2f, PF3f in appendix B)* *Learning and Development Contract Template (LCtmp in appendix B)* *Updates and Feedback from PF1 and PF2 (PF1&2uf in appendix B)*

Q 2 Sub-questions	Theme(s)	*Data Sources to be Analysed*
e. What aspects of student difficulty could have been limited by implementing change management principles?	Emergent themes to be identified through thematic and narrative analysis "Eight Step Model for Transforming Your Organisation" - Kotter(1995) "Ten Commandments for Executing Change" - Kanter et al (1992) Readiness and Readiness Messages - Armenakis et al (1993), Armenakis and Harris (2002), Personal compacts – Strebel (1996), Duck (1993) ADKAR model – Hiatt (2006) Grief and loss - Kübler-Ross (2008), Carr (2001), Elrod II & Tippett (2002) Loss of identity - Strickland (2000, as cited in van Schoor, 2003) Loss of mastery - Moran & Brightman (2001) Resistance due to uncertainty (Carnall, 2003), Trader-Leigh (2002)	*Portfolios 1, 2 and 3 (PF1, PF2, PF3)* *Reflective Reviews (RR1, RR2, RR3)* *Learning Journals (LJ)* *Portfolio 1, 2 and 3 Requirements Documents (PF1r, PF2r, PF3r in appendix B)* *Portfolio 1, 2 and 3 Feedback and Assessment Documents (PF1f, PF2f, PF3f in appendix B)* *Learning and Development Contract Template (LCtmp in Appendix B)* *Updates and Feedback from PF1 and PF2 (PF1&2uf in appendix B)*
f. What aspects of structure or process in the PDP could benefit from the application of change management principles or techniques?	Emergent themes to be identified through thematic and narrative analysis "Eight Step Model for Transforming Your Organisation" - Kotter(1995) "Ten Commandments for Executing Change" - Kanter et al (1992) Readiness and Readiness Messages - Armenakis et al (1993), Armenakis and Harris (2002), Personal compacts – Strebel (1996), Duck (1993) ADKAR model – Hiatt (2006)	*Portfolios 1, 2 and 3 (PF1, PF2, PF3)* *Reflective Reviews (RR1, RR2, RR3)* *Learning Journals (LJ)* *Portfolio 1, 2 and 3 Requirements Documents (PF1r, PF2r, PF3r in appendix B)* *Portfolio 1, 2 and 3 Feedback and Assessment Documents (PF1f, PF2f, PF3f in appendix B)* *Learning and Development Contract Template (LCtmp in appendix B)* *Updates and Feedback from PF1 and PF2 (PF1&2uf in appendix B)*

Table 3.6 Themes and Data Sources

3.8 Ethical Considerations

As with any research project, there were several ethical issues that I needed to consider in undertaking this research. In principle, this research should have at its core a commitment to "the ethic of respect for truth in case study research" (Bassey, 1999, p 75) but at the same time should place the welfare of the subjects and informants first.

This includes ensuring that subjects and informants participate willingly and knowingly in the research project. This requires obtaining informed consent from all participants, and ensuring that they fully understood the nature, goals and process of the research that they were participating in, and what expectations the researcher has of them. It is also important for participation to be voluntary, and the participants must be given the right of withdrawal at any time, without punitive consequences.

In order to ensure that the above considerations received proper attention, I took the following steps in this project. Firstly, I obtained written informed consent from students who voluntarily participated in the study. This consent was obtained through a verbal briefing on the proposed research to the entire group of course participants, following which a written information sheet and form was given to all students, on the understanding that only those returning signed forms would be considered in the research. Furthermore I gave the students a signed undertaking allowing withdrawal from the project at any time as part of the consent form. All 48 students returned forms agreeing to participate in the study. A copy of the informed consent form is attached in appendix C.

Secondly, an application was made to the Human Research Ethics Committee at the university. This included copies of proposed questionnaires, as well as copies of the documentation referred to above relating to informed consent. Ethics clearance was obtained from the committee, and details are attached in appendix C.

Included in the ethics clearance process were plans and undertakings relating to the research participants: including the privacy and confidentiality of data relating to the research subjects, and respect for the feelings and welfare of the participants especially in terms of their educational growth and development. Participants have been coded by initials throughout this research in order to safeguard their privacy and maintain confidentiality relating to their contributions, both at the time of publication and during any reviews with supervisors and colleagues.

Education and teaching involves a moral obligation on the part of the teacher to ensure that the needs and well-being of the learners and students are the foremost concern. Educational research therefore must take into account additional ethical concerns in addition

to those generic ethical concerns that would apply in most research situations (Soltis, 1990).

In the case of this research, I took care to ensure that the educational experience of the students was not negatively impacted on through my dual role of both course facilitator and researcher. In particular the role of participant observer/researcher should not detract from the education provided by the facilitator. The role of the facilitator could in fact be enhanced by the feedback obtained from observation, thereby providing benefit to the course participants.

Related to the issue of voluntary participation mentioned above, is the issue of the relationship between the course participant (and potential research subject) and myself as the course facilitator-researcher. Extreme care had to be taken in order to ensure that course participants did not feel obliged to participate as research subjects simply because the researcher was the course facilitator (Anderson, 1998).

Care too was taken in ensuring that those students who agreed to participate in the research aspect of the course were not materially affected by their role as research informants and subjects. In particular it was important that research participants should not feel any additional pressure to perform, and should feel able to participate in the course in the same way as any other course participants.

Ethical considerations relating to the general research process were also taken into account and discussed earlier in this chapter in sections 3.6.1 and 3.6.2.

3.9 Conclusion

The diagram below summarises the approach I took in this research project, showing the sampling, data analysis and presentation and discussion of findings. The remainder of this report includes presentation of the individual student narratives in chapter 4, a cross study analysis against the guiding research sub-questions in chapter 5, and discussion, reflection and conclusion of the study and its findings in chapter 6. Data is included in the appendices to this report.

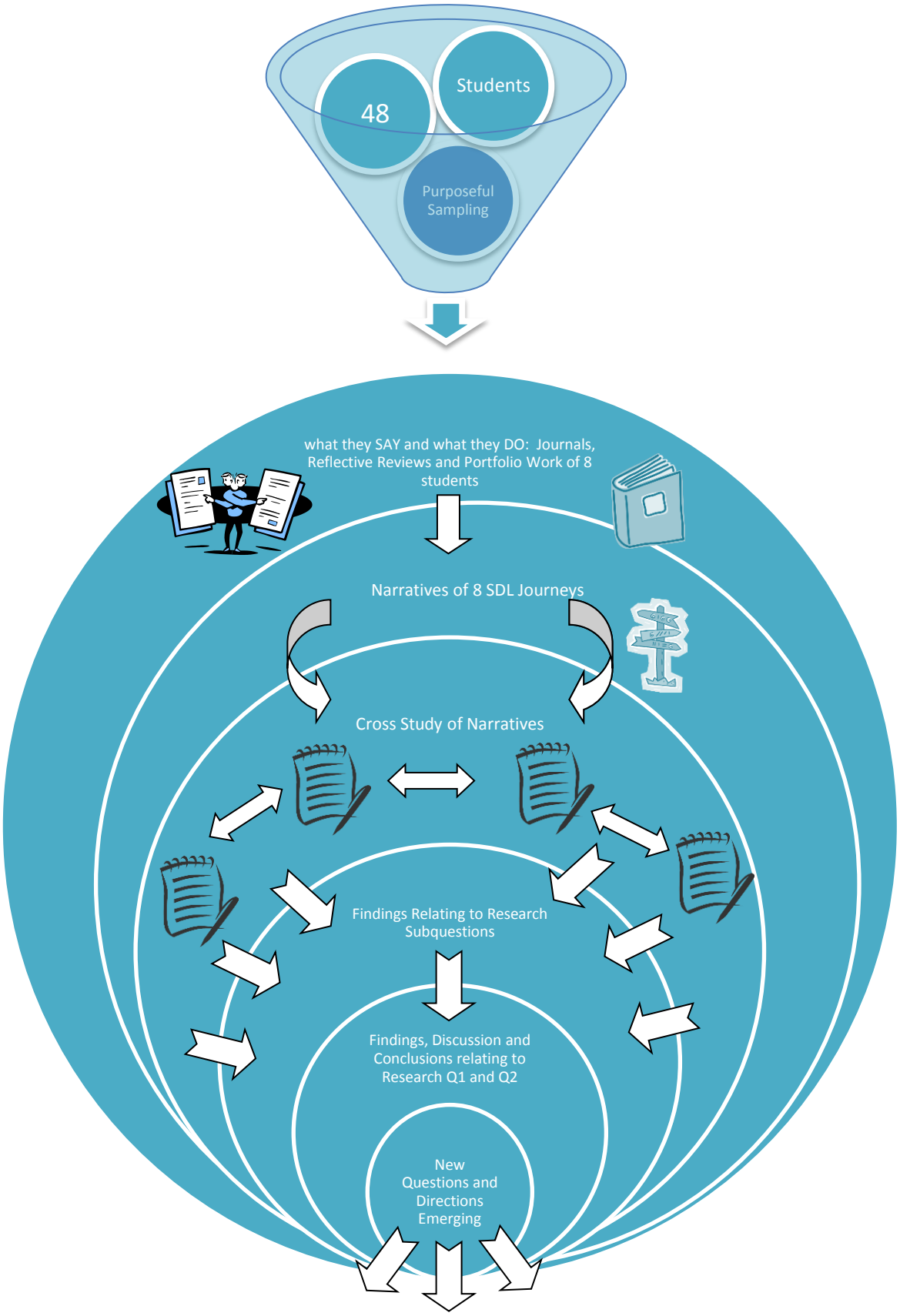


Figure 3.8 A Diagrammatic Summary of the Research Approach

Chapter 4: Student Journeys in Self-directed Learning

4.1 Introduction

In this research project, I set out to evaluate a specific self-directed learning intervention, in terms of the opportunity it provides young adult learners to develop the skills, attributes and values required to succeed as self-directed lifelong learners. Furthermore, I wished to examine the potential relevance and contribution that adapted change management and organisational development theories and frameworks can make towards mediating the change introduced into this educational environment by the SDL intervention.

I undertook this research using two overarching research questions which asked:

1. In what ways does the Personal Development Portfolio (PDP) provide students with exposure to, and learning opportunities through which to develop, self-directed learning skills, attributes and values?
2. What contribution can the application of change management and organisational development principles, theories and frameworks make towards mediating the change inherent in the previously unfamiliar pedagogical approach of Self-Directed Learning, thereby facilitating student adaptation and success?

Using a case study approach I explored these two main questions in detail using data of various types, drawn from several sources to answer a set of sub-questions relating to each of the main research questions. In this chapter I present an analysis and discussion of the findings of this research as described in chapter 3.

I begin by sketching a brief picture of the class, describing an overall view of their achievements in the three parts of the portfolio together with reference to the marks they received in their final exam for the course.

Thereafter, I use narratives to portray the journeys of each of these eight students as self-directed learners as they complete the PDP over the course of a semester. In telling each student's story, I draw on their personal reflections as expressed in their reflective writing pieces, together with their learning journals as these help to define the path their journey took; from a starting point towards a desired destination, with all the twists and turns, detours, dead-ends and backtracking that occurred along the way. I also examined their submitted portfolio work in tracing their journeys, for evidence of their successes and

difficulties. In doing this analysis, I used table 3.6 to guide the choice of what aspects of their experience to include in the narratives and used story maps as a tool to extract and order aspects of each student's story, as described in detail in chapter 3. I represented student names by initials in order to preserve their anonymity.

4.2 A Pencil Sketch of the Class and the PDP

Consisting of 48 students in total, the class featured in this case study consists of a varied group of students in terms of their academic ability and levels of diligence and participation. They are a diverse group of students fairly representative of IS II classes in terms of race, and containing a fair balance in terms of gender. They represent a typical range of ages for second year undergraduate students, and come from a range of socio economic backgrounds. The scope of this investigation does not, however, include an analysis of student demography.

There was a wide range of achievement across the aspects of the SDL experience, with some students performing similarly to the rest of the group of students as shown by their achievement in the final course exam, while others performed very differently. Some students started out slowly and performed more strongly in the later portfolios, while others seemed to start out strongly but didn't manage to sustain their level of achievement. Others again, whether achieving strongly or weakly, performed at the same level consistently throughout the PDP. In choosing the sample for this study, I tried to represent as many of these journeys and achievements as possible, as described in my approach to sampling in chapter 3.

As described in chapter 2 and summarised in figure 4.1 below, The PDP required students to complete an SDL experience over the course of the semester.

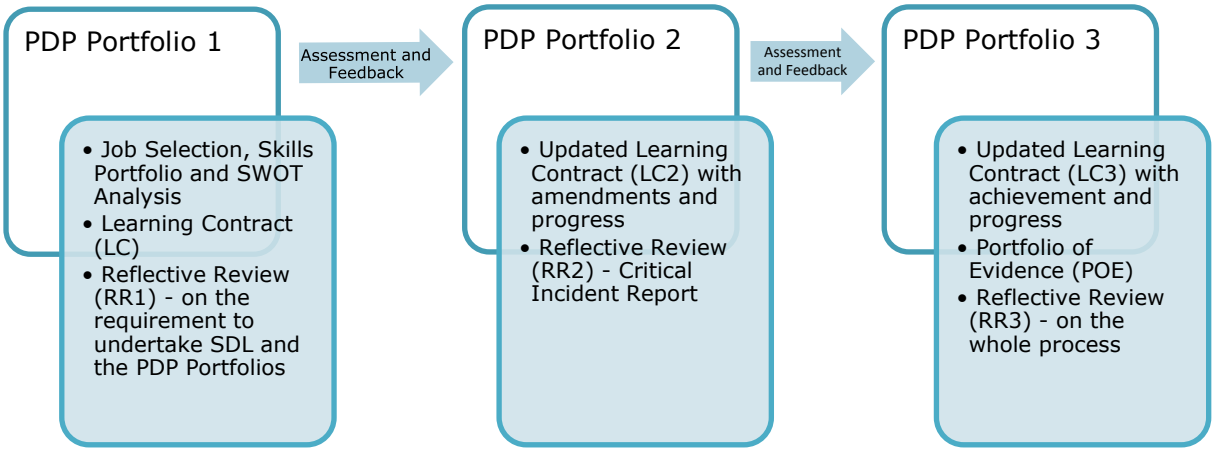


Figure 4.1 The PDP

4.3 Early Journeys in SDL

What follows in this section are eight stories of early SDL journeys or experiences, representing some of the many paths travelled by the whole group. I have tried to use students' own words to illustrate their stories where possible in order to allow their voices to be heard. Out of respect and admiration for their efforts, I have not edited the extracts, quoting them verbatim. Spelling and grammar mistakes are therefore present, and much of their writing is very informal. Extracts are drawn from Portfolios (PF1, PF2, PF3), Learning Contracts (LC, LC2, LC3), Learning Journals (LJ), Reflective Reviews (RR1, RR2, RR3), and the Portfolios of Evidence (PoE).

The stories are presented in the order in which I presented the summary of the sample of students, with the students achieving higher examination marks appearing first.

4.3.1 ED's Journey

ED starts out as a reluctant if potentially capable PDP participant. "At first I thought this was just a run of the mill research piece that would serve no meaning ... I was even annoyed to discover what comprehensive research was required ..." (RR1).

Very strong academically, she is "very happy to be in the group I am in" for the team project (LJ). A team of similarly driven and capable students, "Everyone wants to be organised and get the project done well before the due date to avoid stress" (LJ), puts ED at ease as "I feel that everyone is committed to getting a good mark and putting in good work" (LJ). ED usually dislikes "working in a team in projects because I usually end up doing most of the work and organising … this really frustrates me ... it is unfair and makes me very stressed" (RR1). She chooses "becoming comfortable with teamwork and communication with group members" as a development goal, because her chosen career as a user interface designer will require her to work "at the very least as part of a cross functional team" and she wants to work "confidently in this environment so that I can focus on my own responsibilities instead of worrying that the project is being done incorrectly or not understanding the team dynamic" (LC).

The strong team creates additional challenges and in underestimating the requirements of the first milestone but still needing to hand in an excellent project, they create time pressures on the PDP work which ED intended to work on once the milestone was complete. "At first I paid little attention to [the PDP] as I was more concerned about having to get my group's milestone project [done]" (RR1). "I am worried that I have left it very late" (LJ). Two days before the submission date for the first milestone and portfolio, the milestone is finally ready for printing and ED identifies that "we are going to have to be a lot more specific in how and when we are going to get things done so we can avoid the last minute

stress" (LJ). On the same day she reports having "finally finished researching for my portfolio piece and started writing. I can see I have managed my time poorly – this piece is a lot more work intensive than I first realised and I have been so busy worrying about the milestone piece that I have neglected it" (LJ).

ED produces a strong PF1 with detailed research, a well-executed SWOT and discussion, and a detailed learning contract. She defines a good mix of appropriate and relevant goals, and identifies a broad set of resources and strategies for achieving the goals, involving several approaches and drawing on other people. With this, ED demonstrates the ability to *self-analyse and identify gaps in knowledge and skills in a context,* and *to define and plan learning goals and tasks.* In particular, her ability to realise the potential downfalls of working as part of a strong team, as opposed to those she had experienced as part of a weak team, shows considerable thought and reflection, and an understanding of her personality and natural tendencies. ED identifies the "very competent and outgoing" team members as posing a new challenge: "I worry ... that I will allow someone else to handle everything rather than being involved myself as I am a more reserved person. I intend to ensure that I actively participate even if it makes me feel uncomfortable" (RR1).

ED comments on her concerns relating to her chosen goals worrying that "I will become lazy about doing them, particularly during stressful weeks in university. I also worry that I will simply not have enough time to complete them on top of study and working part time" (RR1).

In her reflective review, ED describes how her opinion of the value of the PDP changed as she started to engage in the work. "Once I managed to start researching I was surprised by the number of job types available ... I had always thought if you were not a programmer, you were most probably a systems analyst or did technical support. I did not realise how complex and extensive the field really is (RR1). She confesses that "I have never actually thought carefully about exactly what career I want, beyond being involved in the IS profession. This somewhat shocks me now as I'm not sure how I thought I was going to achieve finding a job without knowing what my options are and what I need to work towards to get there"(RR1). She describes a realisation "... the field is not really about how much you know. With rapidly advancing technology and languages and tools being constantly invented, it is rather about how much you are prepared to learn and whether you will be self-motivated enough to teach yourself". This "gave me much more interest in the project, especially when it came to creating the SWOT analysis and personal development plan." (RR1)

ED demonstrates several of the abilities, values and attributes needed in a SDL. She identifies *felt needs* (in her teamwork goal), is a *reflective learner* who reflects on

appropriate aspects, with an *honest perspective* on both the *positives and negatives*, and demonstrates *awareness of the need to plan for the future*. She sums up her reflection on the PDP as "an opportunity ... to seriously consider the future, and a wakeup call. It felt good to try and create a plan ... to improve myself for the future. I did not enjoy writing in the journal to start with ... However, I found that when I became frustrated with my portfolio piece and started writing about it, it helped me realize what a positive thing the work could be in terms of being able to focus on and plan for the future" (RR1).

The second phase of the PDP sees ED starting early with work on her development goal as well as writing in her journal. Thereafter, no entries are made until the day after the team has submitted their second project milestone. ED reports that she has now started work on her PF2 (once again after the team project is completed) and complains about the heavy workload across all her subjects "which is making me feel very stressed" (LJ). She is juggling to try to keep up "I missed this week's lab to try to catch up my marketing work which was really stupid because now I'm behind in programming again. Being behind makes me feel really incompetent" (LJ).

In her discussion on her progress towards her learning goals, ED describes her *progress* with her teamwork goal as being helped by "being in several group projects, both in IS and my other subjects. Although I still dislike group work, I feel I have progressed ... I feel more confident in putting ideas in and taking charge if I need to" (LC2). ED describes how she has now slightly *altered this goal* to focus on the communication aspect of team work. "I have come to realize that communication is an on-going process ... working with the same group of people ... I am finding it easier to talk in the group and I feel more confident ... but [this] has not helped me overcome my shyness. I still feel awkward when speaking in class or to other people I don't know" (LC2).

ED also acknowledges that she has had little time to go beyond the basics of her second goal of learning HTML (a web programming language). "I have finished the beginner tutorials and can create a very basic website ... I really enjoyed following the tutorial and building my first webpage ... I have not spent enough time developing this skill as I have found it difficult to set time aside for it, and to motivate myself to keep doing it, particularly in the last two weeks with the many projects due and tests I have had" (LC2). She decides to rationalise her goals and to continue working on the HTML and defer her third goal to the next semester.

ED does however add a fourth goal to her development plan in response to a *felt need*, "to improve my time management skills" (LC2). "I originally thought I was reasonably good at this but I have found that I have felt rushed and stressed this entire block in terms of finishing projects and studying for tests" (LC2). ED sees this as benefitting her in being

able to "apportion time for myself to study and work on projects each day, as well as being able to give myself slots for free time ... [which] helps me work better during the times I assign for myself to work." "I am hoping that by improving this skill I will reduce the amount of stress ... and [it] will also allow me to hand in my best work, instead of rushing to finish" (LC2).

Time pressures and the juggling of work were also raised in ED's reflective review. "At the beginning of the lab session I was already stressed about the programme we were about to receive as I was behind on my programming and had not completed the previous week's project ... I started immediately to work on the required small programme ... and subsequently spent the entire session trying to debug the small programme with the tutor. For this reason I was not able to start the main programme" (RR2). ED expressed several reactions to this incident, "feeling frustrated and angry", "embarrassed by my incapability" and feeling "inadequate". Later she rationalised that her friends "had a lot more programming experience" and realized that "I would need to give myself more time to learn". She stated however, that "this is something difficult to accept as I am used to being good at my studies and I do not like feeling incompetent or stupid" (RR2).

ED concludes this reflective review by identifying the "significant value" in the incident "through showing me that I must be willing to persevere and overcome difficulties ... The IT and IS environments evolve rapidly and it is essential that I be able to be confident in my own ability to learn continuously if I am to become part of the professional environment" (RR2). She ends the portfolio saying, "It also made me realize that it is not shameful to ask for help, another quality that will hold me in good stead as I journey towards my future career" (RR2).

ED's first journal entry for the third phase of the PDP comes 2 weeks into the period, straight after a group milestone submission. Once again stress levels are high "I am feeling like we are skidding out of control" and ED expresses gratitude that "I am in such an organised group for the IS project ... At least we have managed to work on our project consistently without too much last minute panic" (LJ 26/3). She expresses some concern over being "organised enough when it is my turn to coordinate, so I don't let everyone down" (LJ 26/3). In the next journal entry, early on in the milestone, ED reports that it "looks like we will be [finished] early" (LJ 14/4). Three days later the team is still on track, "Everyone is feeling quite pleased, so hopefully we can get done early and not have any last minute stress" (LJ 17/4). Two weeks later in the next journal entry, ED opens with "This week has been horrific" (LJ 1/5). Tests and outside commitments of other team members have had some impact on the group, so "most of us left the milestone a bit late". Internet problems with under-sea cables and personal computer crashes sent the team into a last

minute panic, "so we had to wake up someone else to finish putting it together. Then I had to finish my VB programme and write up which took me until 3 in the morning. I still have 2 projects due on Monday ... AAAAAAAAAAAAHHH I don't know how everything got so late!" (LJ 1/5)

Despite the final entry in her learning journal quoted above, ED recovers sufficiently to submit a very detailed and well thought through final PDP portfolio. Progress on all her learning goals is well described, and she *comments on her actual learning* activities undertaken in comparison to those she specified in her plan (LC 3). She presents a *balanced and realistic view of her progress* "I think my communication has improved drastically despite the difficulties. I think my learning process could have been more assertive, as I was quite passive in achieving progress in this goal ..." (LC3).

She displays awareness of the value of aspects of the LC such as evidence and validation, when she indicates that she "did not implement my plans of asking my peers for assessments as I felt awkward ... I did not keep a record of my thoughts as I intended to either which has presented a difficulty in assessing myself" (LC3). She shows *awareness* of lack of self-management when she describes disappointment "that i have been so lazy in working towards this goal and realise that I should have appointed a specific time for myself to work on learning HTML ..." (LC3). She also indicates *thinking beyond the present* "I have realised that this is a perpetual goal that I will have to work on maintaining forever" (LC3).

She completes her PDP work by reflecting on the process from the start, acknowledging her initial scepticism, resistance and superficial approach; "thus to begin with I was not particularly attentive or thoughtful beyond a superficial level why I would need to complete the goals, and the project was more a chore for me than anything else" (RR3). Later however, "I had begun to realise that the development plan wasn't actually a joke and that I was going to have to get my act together ..." By portfolio 2, "I adjusted my goals during this portfolio to goals that were fully meaningful to me and tried very hard to set time aside to complete them." But "it was difficult, particularly as I was finding time management in the beginning of the term particularly challenging ..." (RR3).

ED reflects that "Overall I did actually get quite a lot out of this project. I discovered what possible job opportunities I can set my sights on and realised how much work I need to do outside the scope of my courses if I am to achieve them." She also comments that she "ultimately discovered a few things about myself such as that I will need to work on self motivation if I am to achieve any of the goals I set myself ... and that I am definitely capable of teaching myself new things." She ends by saying that "although I did not give myself all the opportunities to grow during this project that I should have, I did progress towards my goals and I am proud of what I have achieved" (RR3).

ED received marks of 82%, 95% and 83% for the 3 portfolios respectively, wrote sporadically in her learning journal throughout the period, and achieved a mark of 69% for the exam.

4.3.2 OL's Journey

OL makes it clear from the outset that he is completing this portfolio under duress, "Although this portfolio has been a little helpful I still think that it wasted a lot of time ... The only part of the portfolio I enjoyed was the researching part because I got to know more about the job requirements and the knowledge and skills that are required" (RR1). He expresses his feelings towards the learning journal quite definitely, "Regarding the journal, I have never kept one before so it was weird, I didn't write that much in it and I think this is the only year I will be writing in a journal because I am not planning to keep a journal again, unless it's absolutely necessary" (RR1).

The job OL chooses is very appropriate based on his strengths and the type of work he enjoys doing. His SWOT analysis shows a fair degree of *self-awareness*, but doesn't focus on his chosen dream job and therefore does not help him in identifying skills or knowledge which he really might have enjoyed pursuing. "My threats that are mentioned are all not related to the career but rather focused now in the current environment. It is the threats I have to avoid now in order to make it through my studying career" (PF1).

He identifies the generic goals of public speaking/communication skills, report writing and time management, and completes the learning contract by including the bare minimum of detail, and choosing resources and/or strategies that require little thought or action. "Time management – online resources – all my work will be handed in on time, I will be at all lectures on time, I will have my team members evaluate me- to make sure that any projects/tasks given to me are finished on time" (LC1).

While some of these development goals may well be *felt needs* "One of my main weaknesses is writing, that is why I don't enjoy these types of portfolios" (RR1), his learning contract and reflective review identify different goals. "My first and main goal is to achieve a minimum of 60% in all my subjects and a minimum of 75% in Information Systems ... to avoid conflicts in the group and contribute as much as I can to the group", are stated as goals in the opening paragraph to his reflective review. He goes on to say "I think my first goal of getting 60% in all my subjects is a bit high because I am not the type of person that studies a lot. I mostly try to understand everything during the lectures and I get very lazy when it comes to studying" (RR1), showing good *self-awareness* of his approach and attitude to learning.

Some of OL's journal entries do discuss issues like conflict among team members and his contributions to the project work, but in general they report on project progress. "After everything was decided for the business card as a group, CP decided to change something on his own without asking anyone about it, I am really angry with him, I will sort the issue out tomorrow"(LJ). "We had our final meeting today. I don't know why but everything was totally unorganised today" (LJ).

He does however return to the learning contract goals later in his reflective review, commenting that "even though I didn't like this portfolio and even though this portfolio has been a big headache for me, it has helped in a few ways" (RR1). These include "made me aware of what kind of people the companies are looking for", "how far behind I am in terms of knowledge and skills" and "has motivated me to improve on the skills that I lack for this job" (RR1). Some journal entries confirm this when he refers to issues such as communication, "I am not going to let them waste money by printing something thats already printed. I guess it was also my fault because I didn't tell them that I was going to print" (LJ).

In portfolio 2, OL makes no changes to his learning contract at all despite feedback asking for more detail, but in his discussion relating to this, he indicates having considered several amendments. "At first I was thinking of changing my "Public Speaking" goal to "Teamwork Skills" but I decided not to change it. The main reason for that decision is that I already have some teamwork skills and it does not seem to be a big issue, on the other hand my public speaking skills are quite bad therefore it is one of my main goals that I want to achieve ..." (LC2). He also mentions that "I had thoughts of replacing my goals with some easier ones that I would be able to achieve easily. Although that would help me now in the short term, I still require those other skills for my career and things will get much easier for me if I start working on them from now" (LC2).

Reporting on his progress towards his goals, OL states that no progress has been made towards public speaking or writing and that "no resources have been used as yet" from those defined in his learning contract. His reasons for lack of progress on the public speaking side is "because I contribute more towards the work and therefore I let someone else go present the work" (LC2). He hopes to "improve on his writing goal a lot during the second block because I have writing tasks for other subjects to complete as well" (LC2). On the time management side, "there has been some sort of progress for this goal. I have been to all my lectures on time. The progress for this goal has been good because I was able to complete all my required work and still had time for sport and other activities" (LC2).

OL writes two journal entries during this period, one of which expresses frustration at "having to wait so long" for the team coordinator to arrive at a meeting. "the good thing is we got a lot work done today, the problem is that we only have a few days left" (LJ).

OL's critical incident report focused on a project management exercise in which teams had to plan and work together to achieve a challenging objective by working with and managing challenging project resources. Although the incident and OL's discussion do not relate directly to his goals, he chooses it "because there were issues which affected my team's performance and that resulted in the task not being completed" (RR2). He describes how the team "got off to a good start ... and at this point there were no problems." Halfway through the exercise, a team member decides "that the structure is not right and he started changing everything" (RR2). OL notices how everyone goes along with the change without discussion, but that this leads to further changes without discussion, and finally an incomplete challenge. He identifies leadership and communication as being important. "Although the workload is spread amongst the group members, each person's opinion needs to be taken into consideration" to develop the chosen strategy. "Leadership skills are very important because there are many choices to make" and "the leader has to make sure the group stays focused and do not change things the way they want to" (RR2). When motivated, OL shows a clear ability to *reflect on a situation* and analyse the value of skills and knowledge and recommend how to improve things.

During the final phase of the PDP, OL takes on the project coordinator role for milestone 3. His only journal entry during this period reports that "I submitted the milestone. We had a short meeting in the morning just to finalise everything and so the group members could sign off. I was co-ordinator for this milestone" (LJ). In his reflective review he comments on how the development project went as a whole, "… [it] was quite challenging, especially towards the end, that's when we had a small problem because there were many different views relating to one question." He also states that "I was upset with my group [a] couple of times … group members would not come to meetings … and I was disappointed with the amount of contribution that some members made …" (RR3)

OL seems to contribute more readily in areas in which he feels comfortable "I always thought I was the laziest and just wanted other people to do my work for me, but instead I did a lot of work…when it came to contributing thoughts and ideas for the written part, I gave the most input" (RR3). His team seemed to look to him for leadership in the project "… all the questions were coming to me whenever they had a problem…" (RR3).

When *reflecting on his progress* towards his learning goals, OL is *quite open* about his lack of effort and motivation. For his first two goals he states that "no learning activities were undertaken" describing his difficulty as "I was not prepared to volunteer to speak on behalf

of my team" (LC3). For his third goal in which he claims some progress towards better time management, he states that he "read online articles (1)" (LC3) and that his success is "arriving at all my lectures on time and handing in all the required work on time" (RR3). He explains that "It was hard for me to work on all my goals because of the other subjects. It is hard to concentrate on too many things at the same time … sometimes I would have a milestone or portfolio due and a test in the same week … at times I would forget that I had to work on my goals" (RR3).

Despite commenting that "ever since the first portfolio I knew that I was not going to progress a lot because I do not like to look back on certain aspects of myself", he also expresses disappointment that he did not "really accomplish any of my goals … because I actually did want to fully achieve at least one of my goals" (OL-RR3).

OL received marks of 75%, 70% and 60% for the 3 portfolios respectively, reported intermittently in his learning journal throughout the period, and achieved a mark of 72% for the exam.

4.3.3 JN's Journey

Writing diligently in her journal right from the start, JN describes what is happening to her and her project team as they embark on the first project milestone. JN has the role of team coordinator for the first milestone and seems quite pleased, "I have always thought of myself as a follower instead of a leader, but I am glad that this project gives me the opportunity to break my fear" (LJ). Her identified 'dream job' is a project administrator, and yet she doesn't make the link between her responsibilities as team coordinator and project administrator in her learning contract, reflective review or journal.

In her first journal entry she complains about a new team member who has joined the team, but "gave absolutely no input at our meeting today" and when this continues at their next meeting, she expresses further frustration. "Our new team member barely spoke a word. Sometimes I even forget that he's there!" However, she feels happy that "the rest of the group gets on really well with each other" (LJ). She considers approaching the new member "to try to get him to open up to us. I feel this would be appropriate since I am the team coordinator", mentioning that she has tried to "make him feel a part of the team by asking him for his opinion on certain ideas" (LJ).

JN *comments* early on that she was "unprepared in my role as coordinator as I hadn't documented minutes of the previous meeting. Although I have started the minutes of todays meeting I plan to be prepared at our next meeting with a printed agenda instead of a mental one ... there was a lot of things to discuss ... we kept jumping from one thing to the next, yes we need more organised meetings!" (LJ) She reports a day later that she is

"enjoying being the leader of the team. I think its the admin because I've always loved organising things" showing that her dream job was well chosen. Despite being early days yet, she reports positively on one of her development goals, "I think my confidence has increased as well because I feel that my team looks up to me ... maybe because I seem to have a certain degree of urgency to get work done" (LJ) *showing reflection on her development*.

JN reports on being far more prepared for the next team meeting, "I mailed everyone the agenda and had a clear plan of how I wanted the meeting to be conducted" (LJ). She discovers however that despite being prepared, "everything didn't go as planned". She acknowledges her leadership role "I know I'm the team coordinator and that I'm responsible for 'calling the shots' so to speak but don't want to lose touch with the group by becoming to formal" (LJ).

While continuing to write a fair amount in her learning journal on a daily basis, JN makes the point that "at the moment I don't see how keeping this journal is relevant to the course work or even to my growth/development" (LJ). She discusses this feeling with other students and reports that "they also think that keeping a journal can be tedious and seems unrelated to IS" (LJ).

While not discussing her learning goals directly during this phase of the PDP, possibly because she has yet to define them, she identifies that "I feel motivated to do this project because working in a team encourages me to work for fear of being the weakest link in the team" (LJ). In her learning contract she lists self-motivation as a development goal.

For the remainder of the period, she continues to write in her learning journal, mainly reporting on her team's progress towards completing the first project milestone. She reports particularly on her feelings towards the team's lack of concern over quality of work. "I was not happy at all with the standard of the work ... I can't believe they would actually hand work in that was such a mess! ... It's as if they don't care!" (LJ)

Time management was also identified by JN as a goal in her LC, which may have emerged out of her experience as team coordinator. "I spent most of today putting my file together ... I was really trying to avoid doing things last minute but things never go as I plan!" (LJ) She further reports "I spent so much time putting the file and template together ..." and having to "reword literally every sentence that R and everyone else had written ... that I barely had enough time to do my portfolio". She reports that "the stress of this milestone had eventually caught up to me" (LJ).

In her reflective review at the end of her first portfolio, JN observes that the PDP made her realise that "before doing this portfolio I had not had clearly defined goals. Searching for a

job and doing research on it has helped me to do away with the misconception I had had about finding a job in the IS sector ... this has motivated me to continue studying in this field" (RR1). She further acknowledges that "Keeping a journal of my thoughts has also aided me to put things into perspective. Writing my feelings down has helped me to understand them better. I am also able to review them and this helps me to recall how I react to certain situations and how they make me feel so that I can improve on my downfalls (e.g. losing my temper) or continue doing things I feel are good (e.g. motivating my team members"(RR1).

Her first journal entry during the second PDP phase describes how "I'm not really good at expressing my thoughts or emotions. This diary is also becoming quite a chore" (LJ). Despite this, JN continues to write every few days and does express many thoughts and emotions relating to her work, her team members, writing a journal and progress towards her goals. Her journal contains a mix of reporting and reflection on what is happening.

In this entry, she reports that "I finally decided to stop prolonging my work and started my research" (LJ), starting with some internet searches relating to time management and self-motivation. She reports that she is going to start using a detailed calendar to manage her time between tasks and short-term goals. She also finds some advice on "taking small steps towards achieving your goals" and "how failure can motivate you" (LJ).

As the team starts work towards their next milestone, JN expresses some concern over the fact that "our coordinator [for this milestone] is the same person that hardly contributed towards MS1. I've decided that if he doesn't work I'm just going to take initiative" (LJ). The milestone work sessions didn't start well with "certain members of our group [not wanting] to work ... And everybody was so chilled, even though we had not yet begun putting work together" (LJ). She describes how she, the coordinator and a third member of the team "decided to crack down on things and managed to get most of the work down on paper" (LJ). The remaining 2 team members did not contribute, with one leaving and the other claiming to "still [be] confused" and later leaving "to go do 'research' for goodness knows what". This "irritated" JN but she expresses relief "that the 3 of us managed to work so well together" despite the fact that "the other two members had such a blasé attitude towards the work" (LJ).

Several days on and it's Friday and just three days before the submission of the second milestone, and JN describes how "our MS2 is a disaster. Although we said that we would not leave work for the last minute, its happened again ... when I had to leave to go home only parts of our work was typed and P [the confused member] was still working on his part." (LJ). JN reflects on how she feels about the team process "we decided to meet on Sunday if necessary and that everyone would email their work to me. I know I love

collaborating [collating] work and have attention to detail but it does feel as if everyone is just relying on me to get things done. I don't mind it but the feeling I'm getting is that they can just dump the work on me and not care" (LJ). Here JN shows *self-awareness* of her strengths and also reflects on the team's actions and abuse of her goodwill.

Despite feeling "stressed" by the last minute problems that were encountered in completing the milestone, JN acknowledges that "There is no use complaining because I understand and accept that our work was finished at the last minute. I hope that we can avoid this with future milestones" (LJ).

Throughout the rest of this phase of the PDP, JN continues to work towards, report on and reflect on her development goals, describing her actions and progress. She identifies several time management techniques that she is using such as "lists of work with deadlines I need to meet", "using a calendar" and "planning a schedule for my day in my personal diary" (RR2). She describes tips for self-motivation including to "stimulate your pain which entails thinking of the bad consequences of not completing tasks or meeting deadlines", and identifies failing and "I also thought of what my team members might think of me if I was the weakest link in the team" (RR2). She describes reading articles and "taking various confidence quizzes and tests" and that "confidence can come from simple things such as compliments, being loved and even failure" (LJ, RR2). Having had one of her defined strategies for confidence building 'talking to confident people' validated in an article she read, she decided to follow through and spoke to a friend who has done IS II already and "comes across as pretty confident to me". JN describes how she chatted to her about "my concerns and complaints about IS. She answered questions I had about groups, the workload and 2nd year compared to third year ... It made me feel better ..."(LJ). JN is actively both pursuing her learning goals and *reflecting on her progress*. She also displays *self-awareness* of herself *as a learner* in terms of her *motivations*.

Her time management goal seems to have become a *felt need* as she expresses how she is "trying to find a solution to manage my time between personal time and time for studying by trying to implement tips" (LJ) that she has found when researching for her goals. She also focuses on time management in her critical incident report for her second reflective review. In this, she describes how her attention to "getting the group work done" had resulted in her being "incredibly worried because I had not completed my portfolio" (RR2). Having submitted the milestone, JN was finalising her portfolio while describing to a member of her team how her "week-end was spent completing the milestone and how I had trouble printing ... I also mentioned that I had only just completed my portfolio" (RR2). She goes on to describe how "he glanced at my portfolio and commented that it looked professional with the table of contents and reference pages but was concerned as to where

my reflective review was" (RR2). JN expresses how embarrassed she felt at misreading the requirements, explaining "I had assumed the review was the daily entries into my journal". She describes how "With no time left, I decided to perform a frightfully awful act. I pulled out a blank sheet of paper and quickly began writing up a reflective review. It took me a few minutes, I then slotted it between my neat stack of papers, stapled it and placed it into the [course] mailbox" (RR2).

JN's reflection on this incident included anxiety over how this would affect her marks, and a sense of unease that her handwritten reflection would indicate to the marker "that my portfolio was completed at the very last minute and that she would regard my work as unprofessional and lacking effort" (RR2). Having submitted her portfolio she expressed "relief that the first deliverables were over, but I greatly regretted having done what I did" (RR2). She does however recognise this "failure" as having the potential for learning; "I am certain that handing in such work will serve as a learning curve for me ..."(RR2). JN had read that "failure can boost your confidence" by determining what could be different in the future. In leaving two major deliverables to the last minute she has also realised that "I need to try to complete individual work well before its deadline and secondly I need to learn to motivate my team to complete tasks ahead of its respective deadline" (RR2). Once again, JN demonstrates an *active engagement* in her development and *reflects honestly* on both the *positive and negatives* of her efforts.

JN ends off this phase of the PDP by reflecting on her journal writing. "I am really proud of myself for reflecting my thoughts in this journal, or trying to at least. Reading my past entries I don't always feel that I've 'reflected" as well as the webCT resources suggest I should, but I am quite content with this journal because it allows me to look back at past events, and although I might not have reflected on them, the mere memory of the event allows me to recall what my emotions/feelings were at the time. I can then compare these feeling to how I would react if that situation would arise in the present and by doing so I have an idea of whether I've grown/matured or even learn from past events" (LJ).

During the last phase of the PDP, JN continues to grow as a *reflective learner*. She writes frequently in her learning journal, with a good mix of reporting and reflection, and brings in many facets of her life. JN is clearly focused on her time management goal and reflects on the fact that although she was involved in some group project work over the week, she wasted some of her study break "at home doing chores or just relaxing. I feel bad. Procrastination is evil!" (LJ) Early on in this phase, home life seems to be making additional demands on JN's time. "My 2 sisters landed today. They're here for my cousin's wedding tomorrow. I've barely done any school work because I helped my mother with chores yesterday and will be seeing to visitors from today ..." and two days later "complains" about

the arrival of a cousin at home for the holidays. "I know that I will have to be the one to take him around and see to him. I plan to keep this to weekends ... I don't want to lose focus off my work because I know that it is difficult for me to catch up. I refuse to compromise my lectures and other school time. It feels good writing this and knowing I mean it, I'm proud of myself right now" (LJ).

Motivation also remains a focus, with her second course, Human Resources, proving difficult. "Today was not a good day, although I got a good mark for my HR debate, I failed my test. I feel so de-motivated right now" (LJ). Two days later and JN is still "feeling so down about this". She *reflects honestly* on her efforts "I suppose I should revisit those self-motivation and confidence sites I wrote about earlier". JN starts spending a lot of time with her best friend, "she is becoming my escape and I don't think that this is necessarily a good thing. Although she is always there to motivate me and give me a confidence boost, it might be becoming a problem for my time management ... I need to control this before it gets out of hand" (LJ).

When JN "takes a day off from studying ... because I don't have any lectures today" she promises that she "will work extra hard tomorrow." She reflects that "it feels as if I might be growing as a person. Realising and taking responsibilities for my actions seems to be one of the aspects I am developing" (LJ). She also reports feeling better about "explaining examples to the class" and that this shows her confidence is growing. "Not to mention the good mark I got for my Systems Analysis test ... because now I'm feeling very motivated" (LJ).

Group work continues to have its challenges, with "our current coordinator seeming to have no respect for the rest of the team who is sacrificing their time to complete this milestone while he is galavanting around campus. He doesn't seem to have very good leadership abilities but that is not going to stop me from working because I do not plan to wait for him to delegate work or guide us!" (LJ) Towards the due date for the project JN reports on how the next coordinator starts "asking me when we're going to print and what's happening ... I thought to myself 'not another one'. I just feel that he should take some initiative, and clearly he should have known that our MS [milestone] isn't complete ... Anyway, I explained to him what I would be doing and asked him to delegate the rest of the work to the other members." She demonstrates that her time management is in full swing "I'm just a bit annoyed because I have a clear idea of the work that I need to complete for each day up until next week and him springing questions like the above to me shows that he doesn't" (LJ).

JN's final piece of reflective writing and her portfolio of evidence paint a strong picture of someone who is taking control of her development goals. JN describes feeling "sceptical"

about "the concepts of a development plan, reflective writing and learning journal ... and was not sure what to expect" (RR3). "My view was that these portfolios would only entail extra work that would bear no significance or have any impact on our coursework and syllabus" (RR3) and she goes on to quote an early entry that reflects this, "at the moment I don't see how keeping this journal is relevant to the course work or even to my growth/development" (LJ in RR3). She describes how "I embarked on this short journey of 'self-discovery' ... and I slowly began to realise the possible benefits of such a plan. I came to the conclusion that it's not often that people look internally to evaluate or even reflect on their flaws" (RR3).

She describes how "in the beginning of March my journal shows evidence that I had stopped reading up on the goals and was now trying to implement the guidelines ..." (RR3). She then notes "that weeks passed and I saw myself becoming less concerned with these goals and at that stage I had to remind myself of them" (RR3). She identifies the practical value of her development, "for example, drawing up a calendar with important dates and deliverables on it not only helped me to manage my time by planning my activities, it also served as a motivational device because it was a constant reminder of pending tasks that encouraged me to keep working" (RR3).

JN finishes off by "looking back, I understand the relevance of this development plan to my studies and my career in the long term." (RR3). She describes "the highs of completing these portfolios are that I gained a greater insight to my feelings and thoughts because reflective writing forced me to explore them further and I learnt how to recognise how a particular event can affect the way I think and can change the way I react to similar events in the future" (RR3). On the other hand, she describes the "downside of the portfolios was tha[t] I found it challenging to reflect on my thoughts ... it was necessary to think deeply ... and completing these portfolios would take me a considerable amount of time" (RR3).

JN received marks of 69%, 88% and 90% for the 3 portfolios respectively, wrote prolifically in her learning journal throughout the period, and achieved a mark of 64% for the exam.

4.3.4 UF's Journey

UF has a late start to the PDP, not submitting anything for the first portfolio at all. Despite being encouraged to submit something anyway, even if late, UF chose not to, which resulted in him being awarded 0% for PF1. Shortly before PF2 was due, UF asked if he might submit PF1 for comments in order to be able to continue with PF2. This was conceded to. He submitted a partial PF1 in which he reproduces a job portfolio for a graduate software analyst taken directly from the internet. No other research was shown. UF did however create a SWOT analysis in which he measures appropriate strengths and

weaknesses against the given job portfolio. He identifies his opportunities as "Few blacks are able to complete this qualification, Skills development initiatives by companies should benefit me, Affirmative action and employment equity should benefit me, IS/IT is a scarce skill, This is a growing industry" (PF1).

The development goals that UF identifies are loosely described "I plan to fast track my programming skills; I want to learn as much as I can about the field of IT; I want to be able to appreciate working in a group" but no plans are outlined or defined. The last goal is particularly appropriate given the job profile requirement for "strong team orientation" and UF's identification of "Hate team work" as one of the threats in his SWOT analysis (PF1).

In his three line reflective review, UF writes that "I have started writing on my journal and it seems to be working well for me by keeping me focused on my coursework and achieving my developmental goals. I update it every Friday evening. This keeps me an hour or two away from mischief but I like it" (RR1).

In his PF2, UF has still not created a learning contract but does write about his activities and progress relating to these goals. UF's first goal was "to fast-track my intake of programming skills". He reports that "I am working very hard on this. I may have been unrealistic with my plan but I still believe that I will go further by being harder on myself" (PF2). UF worked on a program for a client, but describes having difficulties "because my coding skills are short" (PF2). He comments that "I will have to hold off on my plans … as we have not done databases in class" (PF2). Although he described this goal as fast-tracking his development of programming skills, his activities do not focus on how to learn or develop, but on using and evaluating his existing skills. No mention is made of any plans to try to learn or develop the missing skills before they are taught sometime during the course.

Similarly, with his goal of "learning as much as I can about the field of IT", UF claims progress based on "I have been learning a lot in class and in the research I do on the Internet" (PF2). He also however confesses to needing "to improve on my reading and preparation for class. This is because I do not like keeping up with class …" (PF2) suggesting that he was not doing much work towards this goal outside of what occurred in lecturers and seminars.

UF's third goal, relating to teamwork, seems to have featured strongly during this time. UF reports that "this is one point where I have made the most progress" (PF2). UF's point of departure for this goal was described as follows in PF1, "I want to be able to appreciate working in a group. I understand that it is important in this field to be able to trust that others are just as capable to handle responsibilities. I want [to] create trust for others in

my group and give them a chance to show what they are able to handle and be able to assist without being overly critical of their efforts" (PF1)

In his critical incident report for his second reflective review, UF describes the difficult start the group had. "Our group struggled with getting into gear with milestone 1. We had problems setting up a work strategy that would be consistent. I may have been at the centre of the conflict, but I believe this was solely because of my particular circumstances which do not apply to any of the other guys" (RR2). He describes these circumstances as his age, completing his last major (a third year course) and work commitments.

He describes how he wanted to guide their teamwork, including creating "a strategy that would be consistently applied in relation to our working together on the course ... would help us to be productive ... would also help us not have to worry about always setting a time for our next meeting ... there were other strategies I was pushing for too" (RR2). These ideas appear to have met with some opposition from the team, "It became clear to me that everyone believed I had my own agenda here. I believe some may have even thought that I am not serious about the course because I already have my majors" (RR2). He explains some of the areas of what he interprets as misunderstanding. "I wanted them to appreciate that we could have the best working relationship if we remained reasonable about each other's capabilities, availability and expectations. For example, I thought it would be best if we reminded each other about the agenda of next meetings, especially if that member had missed the previous meeting, This was dismissed as my ploy to make sure that I am reminded about my work, when I should keep up with downloading and reading handout" (RR2).

UF *reflects* that "I started to worry that maybe I was not bringing out my points in the right way. I thought maybe the problem is that I have not lead by example. I remembered that I was the only member that had real-life experience of working in a team at work" (RR2). He speculates that perhaps "the things I was talking about did not seem important or make sense to the others ... I was moving too fast for them" (RR2). While making the effort to *reflect*, UF appears unable to really see both sides and look *honestly with self-awareness* at the situation.

A form of truce must have been negotiated or settled into, as UF later describes his approach as "I have been supporting the team. I encourage members to raise questions when they are not keeping up. I encourage that everyone contributes to our assignments" (RR2). He reports that "the members have come around to appreciating most of the things I had suggested at the beginning and we use some of them now as our processes" (RR2).

UF *reflects on his learning* from this experience. "This situation has taught me something that I hope to keep with me for a long time ... I mustn't always expect to impose my views on people. This is especially important in a group situation ... you can all have different views while still pursuing the same goal" (RR2). UF *expresses himself well* in his reflective writing and appears to have had to think about and react to the group dynamics and how best to fit in and work within them.

In portfolio 3 UF provides some discussion around his goals, his perceived level of achievement of each, and a brief mention of the resources and strategies he used. For his first goal, fast tracking programming, he claims some level of success "I think my programming skills are on par ... I can, now, programme with a much more superior understanding of what I am supposed to be doing' (PF3). He feels that "I am still not able to do all that I want to be able to do on VB, but I think a large part of the reason is simple that I have not kept my computer with me for the last few months" (PF3). UF received marks of 58% for the VB revision test and 54% for the VB test later in the course, both marks being around average for the class.

UF's second goal was related to developing an understanding of the IT industry. He describes attending classes offered by the ICT incubator as a resource, together with internet reading. He feels he made some progress towards this goal.

The third goal that UF was working towards related to teamwork, and he describes "learning to understand the dynamics of teamwork" as being "impossible" (PF3). He identifies the challenges as stemming from "all the issues that are involved when you bring a group of people with different circumstances together" (PF3). He reports however that "throughout the Milestones, the group worked very well together. We set targets for ourselves and we were able to meet them, for the most part" (PF3). He identifies that "being positive bring better performance from team members ... it is better to always look for positive things in a member of the team, as opposed to looking for what has not been done right all the time" (PF3).

In his reflective review on the process, UF describes the team accomplishments relating to the project. "Our project went very well we kept a B average, but maybe next time I would like to be with people that appreciate the industry as much as I do" (RR3). UF's team achieved an overall project mark in the high 60's (%), but when marks were adjusted for participation and contribution, UF was awarded a stiff penalty by his team for lack of contribution and teamwork.

Overall UF describes his PDP experience as "more lows than highs" (RR3). "I had lots of fun working on my developmental goals, but hated having to take out time to document them

for submission" (RR3). He does however also comment that "I think this way of studying is very useful and very relevant to, especially, people with no background in IT. It is good because it gives you a chance to experience various aspects of work in this field. This really helps to investigate the area that will best suit your personality and goals in the industry".

UF received marks of 0%, 60% and 48% for the 3 portfolios respectively, did not submit a learning journal, and achieved a mark of 61% for the exam.

4.3.5 UG's Journey

UG describes the beginning of his journey as "the rollercoaster ride of my life… It felt like campus had barely even begun and before we knew it, we were being given a [team] project as well as a portfolio … The excitement that I had felt was quickly fading away, only to be replaced with anxiety and uncertainty." (RR1)

The learning journal requirement seemed to cause particular unhappiness, with UG writing that "I was filled with a sense of dread at having to keep a journal" and "had the preconceived idea" that it would be "unhelpful, boring and a waste of time" (RR1). However, UG started writing a learning journal the very next day, expressing: "I must be honest – I do not see how this journal is relevant to our work in Information Systems. I suppose that I will just have to persevere…"

And persevere he did. Writing daily, UG starts by *engaging in* a mix of *reporting and reflecting*, discussing lectures, the formation of project teams, and in particular talking about an aspect of IS that is of obvious concern, VB programming. Doubts over ability were raised, but some level of relief was expressed after the first lecture and revision test were completed during the first week.

A week into journal writing, UG starts looking at the requirements for the first PDP portfolio submission, and doing the research into IS careers. "I have begun my research and am astounded at the innumerable amount of careers there are in the IS field. This was an exciting discovery." (LJ) However, having found a career that really appealed, UG describes feeling "very demoralised ". "My spirits were significantly dampened as I continued to read about the knowledge and skills that a systems analyst requires. It seemed I did not possess many of the necessary skills and knowledge that a systems analyst needs in order to succeed. " UG then describes how "penning my emotions in the journal enabled me to let go of my pessimism. It also spurred me on to set goals to improve and develop myself." (RR1)

UG's career related research and job profile were comprehensive, and the SWOT analysis and discussion very appropriate and thorough. "My greatest weakness lay in my technical

skills such as programming, my mediocre knowledge concerning methodologies and software programs and my lack of time management skills. Once I was able to identify my weaknesses I began to set goals for myself." (RR1) UG defined three appropriate goals and put together the learning contract to support these. The learning contract contained a fair set of resources and strategies for achieving the goals, but was light on defining how evidence and validation of learning would be accomplished. Overall though, it was evident that UG was able to *self-analyse and identify gaps in knowledge and skills in a context,* and begin *to define and plan learning goals and tasks.* "However, setting those goals was not easy. Although it was I that set them, I still had reservations… My goals were short-term and realistic but I was afraid that I would not be able to fulfil them." (RR1)

After the ups and downs of the first portfolio, UG ends the first reflective review on a positive note, citing an inspirational quote on success, and crediting the quote "along with my learning journal" as having "helped me not to lose faith in myself and my capabilities." Furthermore, UG identifies "compiling this portfolio and starting a learning journal" as providing the benefits of "set[ting] me on the road to self-discovery" and "arousing in me a sense of self-motivation that was previously unbeknownst to me". (RR1)

UG continued to write daily journal entries as he moved into the portfolio 2 phase. Improving his programming remained a strong focus, "I have begun to practice my VB and it shows. I was slightly more confident in class today". A few days later he reported that "I am pleased that my hard work is beginning to pay off" (LJ). He continues to use a mix of reporting and reflection in his entries: "I was made team leader of this [project] milestone. I am worried about the prospect of being team coordinator as it is a great responsibility." (LJ)

A couple of days into the PF2 phase, UG indicates that he has started working on the next of his identified development goals. "As per our Personal Development Plan I have begun researching, systems development methodologies and software programs. There is a wealth of information available on the web and it was an enlightening task." (LJ) Later on in his progress review, however, UG describes how the sheer volume of information available "has left me feeling overwhelmed and confused". He further states that as the field is "constantly changing and evolving" he finds "it difficult to decipher which information is useful and which has become obsolete" (RR2). He therefore *updates* his planned 'strategy and resources' in his learning contract to include using an expert to help guide him in this area.

With two weeks to go before the end of the first academic teaching block and the overall workload increasing, UG starts to write about other aspects of IS and other courses in his journal. At the same time as these new aspects are introduced for the first time, he

comments that "surprisingly enough, this journal has begun to grow on me…I find it helpful as it has become a means to record all my emotions and thoughts" (LJ).

At this point, his third goal comes into play, as he identifies time management as being a problem. "I have been procrastinating ... once again I have been putting off studying for HR and Management ... There are so many chapters to read ... I must start implementing my time management strategy." A few days later, UG reports that he has finally started studying, "It has taken me long enough!" He also indicates that his 3rd goal is now really starting to emerge as a *felt need*. "I have begun to draw up prioritised 'TO_DO' Lists as per my personal development plan. I hope that it will help me to improve my time management skills."

The following week finds UG "highly stressed" but "trying very hard to remain positive". "IS is turning out to be more taxing than imagined" and although "thankfully I have begun to study for HR", he has yet to start working on Management (LJ). His development plan is once again updated with a new strategy: "TO-DO" lists are helping but I am going to start drawing up weekly plans as well" (LJ).

In *reflecting on his progress* against learning goals, he describes how his time management goal has "helped him to stay focused ... As team coordinator, I was entrusted with many responsibilities and this forced me to use my time effectively so that the work of the team as well as my own work was completed on time" (RR2).

The team leadership position also allowed a further *felt need* to emerge, which was added to UG's learning contract as a 4th goal. "I had made a great personal discovery during this time ... it came as quite a surprise to discover that good communicational [sic] skills are invaluable to a team leader. ... I am determined to further develop these skills." (RR2)

UG appears to have made good progress along his journey as a self-directed learner over this period, with several SDL values and attributes emerging. Evidence of two *felt needs emerged*, time management and leadership skills*,* as well as the *ability to reflect honestly, on appropriate aspects,* taking into account *both positive and negative achievements and issues,* and *with an eye to the future.* There is also a growing sense of *self-awareness* in terms of levels of *effort and achievement*.

UG's critical incident report in PF2 provides further evidence in this regard. "We all reach a stage in our lives where we begin to think that we have discovered all there is to discover about ourselves. We go through life with a preconceived idea about who we are and what we are capable of. It is whilst living with this notion that an unexpected, defining moment happens. It is this event, this single moment that changes our perceptions, opens the doors to unforeseen depths of ourselves and allows us to discover new strengths to our

personalities. It was no less than three weeks ago that I experienced one such defining moment myself." (RR2)

UG goes on to explain how a 'surprise VB test' (formative) turned his world upside down ... UG describes how he "was filled with a sense of dread" and terrified that he would be unable to complete the task, unaided within the allocated time. "However, as time moved on my feelings of distress slowly began to slip away and I began to feel more in control and positive about my capabilities." Having completed the programming 2 hours later, "I hesitatingly clicked the 'debug' button and was astounded to find that my program worked!" UG then describes how this seemingly small victory "changed my entire outlook about me and my capabilities", giving him the sense that his goals were achievable. "My feelings of self-doubt and uncertainty have been replaced with optimism and a dogged determination to succeed" (RR2).

UG ends his reflective review by acknowledging the constant change in the IT world and the need for "an IS professional to be open and willing to try new forms of technology" and states that although "there will always be aspects of technology that I do not fully understand or skills that I am not particularly good at, the important thing is not to give up and to persevere until you reach your goal" (RR2).

The third phase of the PDP overlaps with a period of intense work on the IS project and test, VB assignment and VB test, and similar demands from other courses (LJ). UG continues to write almost daily and includes a wide variety of aspects of his university work in his discussions.

His first goal narrows into a strong focus on VB as this is a particular *felt need* with both assignment and test pressures. UG continues to reflect on his efforts and successes "I have been neglecting my VB and it shows" and comments on how the approaching VB test affects his participation in the project work; "I was very stressed for the test and do not think I contributed as much as I could have to the draft". He also shows an increased confidence in being able to *draw on a wider pool of resources and strategies*; "I will have to read up on it"; "I asked the tutors for help today", "I'm going to ask one of my team members for assistance", "I have asked someone for help ... I have a better understanding of it now and am pleased with the result".

With the high work load and accompanying stress, UG continues to draw on his time management goal: "Weekly-Planners are proving to be of a great help as I am becoming more time conscious and I procrastinate much less" (LJ). Work is also done towards his other goals in preparation for building his portfolio of evidence, "I have also been doing research on systems development methodologies again" (LJ). He also draws up a peer

review questionnaire on his communication skills for his team members "to see whether or not I had achieved this goal" (RR3).

UG's reflection on his participation and achievement in the PDP show a continued growth as a SDL. He *reflects honestly and thoroughly* on the process and his achievement as evidenced above in his quotes, and shows *awareness of the need to look backwards and forwards in reflecting*. He describes his feelings about the irrelevance of the PDP at the start both in his reflective review and in his journal; "Looking back to my first entry of this journal I have noticed how sceptical and negative I was about keeping a journal". He identifies the benefits of the journal as "a lifeline for me during this hectic semester", "my outlet to vent my pent-up emotions" and "a valuable tool in monitoring my progress throughout IS2A".

Throughout the PDP, UG uses his journal to capture his thoughts and then uses this to write his portfolio pieces. He identifies his breakthrough point as being after experiencing some success relating to his PDP goals, citing fear of failure as a blocking factor prior to that. In *analysing his achievement* towards his goals, UG claims to have made progress towards all of his goals, acknowledging room for on-going improvement in all of them.

UG signs off his journal with "It is with a great sense of accomplishment and pride that I end this journal" and his reflective review with "I have embraced this change and now, I am never looking back!" (LJ).

UG received marks of 88%, 85% and 81% for the 3 portfolios respectively, wrote prolifically in his learning journal throughout the period, and achieved a mark of 55% for the exam.

4.3.6 CI's Journey

CI started his journey by launching into writing in his journal on issues or events that showed *evidence of his progress* towards his goals. Unlike other students, CI made no comment in his journal relating to his feelings on doing the PDP or keeping a journal, but he did state that he was "sceptical on how it would help me develop my much needed skills" in his reflective review (RR1). CI's journal entries were a mix of fact reporting and discussion around thoughts and feelings.

CI chose a position as a Software Business Analyst as his dream job, but included little evidence that he had done much related research. His SWOT analysis however was *comprehensive and appropriate*, addressing the knowledge and skill requirements given in the job advert.

His SWOT discussion picks up on several areas which he identifies as developmental needs: "In this job I will be working with a development group, but will also be expected to take up

a leadership role in a project, which is something I need to work on", and "Discovering my potential and eliminating self doubt and working more on my confidence as a leader should be among my main objectives" (RR1). The latter quote ends his discussion on his SWOT and no formal learning contract or learning goals are specified. The SWOT analysis and discussion indicate that CI is able to *self-analyse and identify gaps in knowledge and skills in a context* to some degree.

From his journal entries during the first portfolio phase, however, it is clear that CI has formulated some goals, as these entries comment on how specific events are contributing to his achievement of his goals. "This really built my leadership skills and changed the way I doubt my own abilities" (LJ 8th Feb) and "This situation, I believe is teaching me the valuable [sic] lessons of managing time efficiently as to fit in all my acedemic work into the week ahead" (LJ 10th Feb) and lastly, "This built my confidence in terms of public speaking. This might have been a small crowd and a small step to in terms of Public Speaking, it was a step to my goal of speaking publicly with confidence" (LJ 11th Feb).

He further comments on his goals and the role his journal is playing in working towards achieving them in his first reflective review: "As I got to writing in the journal on a daily basis, I realized that as the days were going by I was actually learning how to overcome my weaknesses that I knew I had and enhancing the strengths I already possessed" ... "On the 8th of February I made some progress in eliminating self-doubt, when the project group selected the name I chose for the company formation which is TechFFICIENCY, which really built my confidence in my own ideas" (RR1). There is at this point still no real means by which to determine the extent to which CI is able *to define and plan learning goals and tasks.*

Throughout this period, CI situates his writing and thinking in the context of the IS team project and his team members. "We got together and I realised that our group is diverse in terms of personalities, this made me think to myself that this group situation would really test my people and communication skills" (LJ). "I had another group assignment running alongside the IS project ... in my mind I knew that I have to attend both meetings ... teaching me the valuable lessons of managing time efficiently ..." (LJ). The influence and effects of other people and situations are integrated into CI's development plans early on.

CI closes his portfolio 1 reflective review with the following: "My view on the usefulness of doing this portfolio has changed. Now I see this portfolio as a useful tool for working towards self development." He further acknowledges that "This way of self development only works if the person sets ~~aside~~ goals that he or she would like to achieve" (RR1).

During the second phase of the PDP, leading up to portfolio 2, CI writes only 3 journal entries in total, despite this being the period in which he plays the part of project team coordinator. In the first entry he indicates that he has been elected to lead the 3rd project milestone and expresses excitement at the "opportunity to show the group members how I am capable of leading" and hopes that "the group members play along and contribute" (LJ).

CI's PF2 contains a full learning contract together with the required commentary on progress and changes to the original one. There is evidence that CI is learning *to define and plan learning goals and tasks*, but there is still a great need for support. For example, CI lists public speaking as a goal, and categorises it as **ACHIEVED** (CI's emphasis) in PF2. His resources and strategies consist only of strategies ("I will present work during class", "I will speak more in group meetings" and "I will review my choice of words when speaking publicly to enhance the power of what I am saying") (LC2), and his evidence of "Each time the group was required to do a presentation in class or the group had a question for the lecturer, I would speak out" (LC2). In his discussion on his progress towards his goals, CI does mention other instances of presenting work to "parents, siblings, family members and friends in a presentation setting" and of how this "made me secure in terms of speaking to a group of people" (RR2).

CI's *discussion of* his other goals and *progress* is more grounded and realistic: "In the area of time management I am making progress but it is very slow" and "I am having trouble with eliminating self-doubt." He also adds a further goal to his learning plan, "namely self motivation. Self motivation is important for the fact that nobody is standing behind to push me to do what is required of me at this stage in my academic career, and in the work place and future career I want to pursue nobody will." (RR2) This is possibly an emerging *felt need*.

The critical incident which CI reports on in his reflective review is strongly tied to his goal of improving time management, and seems to have been a catalyst in some ways to the emergence of a strong *felt need* in relation to this goal. With the project milestone far from complete the day before it was due, CI describes his reactions and feelings as he moves from anger, fear and helplessness to being able to cope and take control: "At the time the episode occurred, I had a feeling of inadequacy in terms of coping ... After I reflected on the situation ... I set a plan into action. ... I developed a sense of empowerment" (RR2). He reflects how this incident highlights that both he and the group had time management issues, and "made me grasp the importance of effective time management skills" (RR2). He further demonstrates how he learned from the incident: "For the next milestone and the portfolio 2 deliverables I planned in advance, putting time in place for to space out the coursework I had to do ... helped me to move closer to one of my goals ..."(RR2).

Interestingly, CI does not connect his ability to take control, plan and execute the rescue as *evidence of his growth* towards his elimination of self-doubt goal, although his motivation for achieving this goal is given as "For my dream job I will have to constantly give ideas and not doubt my own abilities to in terms of problem solving" (LC2).

After helping to rescue the previous milestone, CI takes over the ropes as project coordinator and from the start makes it clear that he believes that his success as leader and in getting the job done relies heavily on the cooperation and support of his fellow team members. "I just hope that the group members play along and contribute" (LJ). Towards the end of this period he remarks that "project coordinator is not a easy task, it has been very demanding up until now ... with certain group member not pulling their part ... even more difficult to keep the group's morale up." (LJ) He links his *success and progress* to team members as well as his own efforts. In his last journal entry, CI reports that the milestone is ready, a day ahead of submission, yet doesn't link this as *evidence* of his improvement in time management. In this entry he does link the need to reflect, with a book that he has been using as a resource for one of his learning goals.

In this second phase of the PDP, CI demonstrates the ability *to define and plan learning goals and tasks* to some degree, as well as to link incidents to learning goals, even if some incidents or achievements are not recognised as evidence of progress and success. The addition of a fourth learning goal (a *felt need*) indicates *on-going reflection and engagement with self-development*. Hard work and success are valued by this student.

Virtually no indication of what happened during the third phase of the PDP is given, as CI stops writing in his learning journal the day before he submits the project milestone that he led.

In his final reflective review, CI indicates that over time he came to value the PDP experience: "At first I felt creating learning plans was a waste of time and having to write in the learning journal would serve no purpose" but "Overall the experience of pursuing these development goals was a positive one ... it turned out to be a worthwhile exercise". He further describes "some goals I viewed as more important and my efforts and motivation towards achieving them were according to that" (RR3). He identifies that his original goals "were formed by direct influence of what I think my future career would require me to do, but it later turned out to be helpful skills to have in everyday life" (RR3), indicating they served a *felt need*.

CI's updated learning contract indicates that he still needs support in developing the skills to really succeed as a SDL. In both the definition and recognition of resources and strategies he still records a limited set, but reports elsewhere on doing things and using people and

other resources very well, though not always recognising the actual contribution these have made to his progress. This is true too of *identifying appropriate criteria for measuring success* and *identifying and evaluating success* or progress when it does happen, as was discussed earlier with regards to time management.

His updated learning contract and portfolio of evidence, as well as his reflective review, indicated growth in terms of skills, values and attributes of SDL in CI. *Felt needs* were in evidence, together with a growing sense of *self-awareness and self-direction*. He *reflects* on his progress, and comments on knowledge and skills that have emerged "I have learnt that I am a good leader and that I have certain skills that I never even thought of, such as conflict management skills" (RR3). He comments on both the *positive and negative* aspects of his progress, and makes tremendous progress in realising that despite not achieving a goal, "this was not a major upset because I can still continue to pursue this goal" (RR3) in the *future*. He notes in his discussion on LC3 that "I consider this goal as unachieved and plan to continually work on it until I perfect it, maybe even changing the title of the goal". This last statement indicates an awareness that is further commented on that this particular goal might need reformulating "perhaps the problem isn't motivation, but another sphere of time management ... " (LC3), as well as the intention to continue *driving his own learning* into the *future*. CI also comments that "If I could redo [the PDP] I would set more specific goals and set more realistic deadline for achieving those" (RR3).

Postscript: Based on personal interaction with CI after the conclusion of the PDP exercise, I believe that his journey as a SDL only really got going towards the end of the PDP, but has continued since then. On returning to class after exams and holidays, CI cornered me with great excitement about everything he had experienced and learned during the break. He had decided that there were "big holes" in his knowledge and understanding of some of the coursework we had covered (*felt need*) and so decided to get a holiday job (*strategy*) to gain more experience (*resource)*. When he failed to get a job, he changed tack and instead took on a job shadowing role. He kept copious notes on a daily basis on what he had seen and had developed a set of questions relating to things that had puzzled him. These included practices that seemed at odds with what he had learned, and that he couldn't find resolution to in further reading.

18 months on, CI still pops in regularly to talk about what he's doing and learning and demonstrates a new level of confidence in his abilities. He tutors first year students and having experienced a change management project, has requested an opportunity to talk about it to the 2nd year class. He has also gone from strength to strength academically, achieving 75% at the end of his second year. At the time of writing in Dec 2011, his 3rd

year marks are looking strong and he has been given provisional acceptance into the honours program based on maintaining these marks in the final exam.

CI received marks of 57%, 75% and 67% for the 3 portfolios respectively, wrote sporadically in his learning journal to start with and stopped writing completely during PF2. He achieved a mark of 58% for the exam.

4.3.7 KE's Journey

KE had a very shaky start to the PDP and his second year IS studies in general. His first journal entry is apprehensive "I don't know what the group expects from me, but at least one of my group member was a friend of mine. I had to go through the remaining three which I think its not gone to be easy to do" (LJ). Despite his written language skills in English presenting a challenge, KE expresses his concern over the expectations of his new team, but also indicates that he wasn't alone in feeling unsure "Milestone 1 meetings came and went. For this milestone everyone was trying to impress so no major conflict was experienced".

KE confesses to spending very little time on PF1,"Honestly I didn't do the portfolio properly because I remember [it] took me 2 hours because I was busy doing the milestone" (LJ). He acknowledges that "I need paid attention to the submission data – the milestone and the portfolio were due on the same day. I honestly didn't have enough time …" (LJ). In this way, KE demonstrates that he has *reflected honestly* on how the first portfolio went, how much effort he [was able] to put in, and therefore what he managed to achieve.

KE chooses Visual Basic (VB) Developer as his career, but as mentioned above had done little research. His first submission consisted of only 1 page other than the cover page, and contained virtually nothing that was required, earning him 8%. KE was given a chance to resubmit, given that the purpose of the first portfolio was to set the stage for his self-development across the semester.

Commenting on his second attempt, KE says that "I guess everyone never had enough time. I didn't the second time and it had some impact on choose of career. I didn't know what to do and am still not sure if the choose I have made is the best" (LJ).

His second attempt at the portfolio is slightly better, identifying *appropriate knowledge, skills, values, attributes* and so on, for the ideal person for the job position. He struggles to do the SWOT analysis, possibly misunderstanding what to do. KE selects 5 appropriate, if generic, goals for his PDP, but battles to complete the learning contract with sufficient and appropriate detail. For example, when specifying his goal of "Public Speaking" his resources and strategies are simply "attending public lectures" and his evidence and validation "When

I am willing to speak in public" (LC1). Similarly his strategy for "Time Management" is "submit milestones and portfolios before due date" and "no late coming to class". His reflective review however doesn't focus on the requirement at all, despite the fact that he has shown that he is *capable of thinking about his learning* in his brief learning journal entries.

KE's second portfolio is a vast improvement on his first, albeit the requirements are significantly less. In this portfolio several complicating factors impacting on his studies and ability to cope emerge. Firstly, he writes about his parents fighting and threatening divorce, with the family being called in "to resolve the matter and they reach an agreement because the divorce never went ... but to me it seems like it did happen …". KE feels very caught up in the struggle "every time they argue I can hear my name …" and expresses the need to "finish my degree as soon as possible just move out of my parents' house. I just want to be independent". Juggling work and studies "sometime one face tradeoff between part time work and studies" and other commitments "I have joined 3 student societies" is also making it difficult for KE to cope. "Time has never been on my side this whole teaching block, things move quicker test, assignment, etc." (LC2). KE fails his IS tests and assignments during this time, and is working with a project team in which several members are also battling academically.

In his third portfolio, KE again identifies lack of time as being the main contributing factor to not doing well in his PDP. "Honestly I didn't have enough time to do some of the portfolios because there were due on the same day as the milestones. I never had enough time to deeply describe them" (RR3). While this was true of the first portfolio, the second and third portfolios were each due a week after a milestone. Reflecting further, he states that "I personally don't think I add enough effort to some of my portfolios work meaning some parts were unfinished or not to required standard. Sometimes I skip other parts which were important for my development but this is a learning curve …next time I will do it much better in a different way (RR3).

KE indicates in his writing that although he has made little effort and achieved little progress, that he has learned something from the PDP experience. "I always thought to myself, 'be positive and everything will work out fine'. The portfolios and the milestones taught me something different in a way that sometimes you have to sacrifice everything even your social life if your want to survive" (RR3 and LJ). "Doing a personal development plan helped me to reflect and identify myself; I identify objectives (soft skills) that will help me to grow as an individual and survive in the corporate world" (RR3 and LJ).

While still apparently unable to fully define learning goals and the related aspects of a learning contract, KE has developed an awareness of some of his shortcomings and

continues to *demonstrate growing self-awareness*. KE finishes off by saying "It was challenging, stressful and at the same time motivating because it helps you identify your personality and the soft skills one needs…Next time I would change how I manage my time and try to dedicated or allocate more time in doing this portfolios. Increase the standard to more acceptable one" (RR3).

KE received marks of 38%, 60% and 43% for the 3 portfolios respectively, wrote twice in his learning journal at the beginning and end, and achieved a mark of 50% for the exam.

4.3.8 PU's Journey

From the very beginning, PU writes with great expression and in some detail in her journal. Her first entry describes her first week back on campus for the new academic year. "The past week was a shocker ... coming back from a loOoOng an extremely laid-back holiday to *---* BANG! a lot of work was extremely stressful!! And still is" (LJ).

Her first entry describes initial work on the project "coming along slowly ... I'm afraid we might not get it done", managing team work "its hard organising meetings in our free time", concerns over IS "IS is my major, and my MAJOR concern is not passing ...", and thinking about the challenges ahead, "I need to work my butt off or really work smart to pass this year but not just pass but do really well *THUMBS CROSSED*". (LJ)

Already the change in approach to IS in second year to a more seminar style is worrying PU. "I like order and I like everything to be structured and routine, its hard trying to get 'out of my shell' i.e the interactiveness in our IS lectures". In this way, PU reveals not only her shyness and her dislike of change, but also *self-awareness and her ability to reflect on situations*. She does however acknowledge that "I think a hands on approach to lecturing works well. It gets students involved as well as thinking" (LJ).

PU writes extended pieces every few days, reporting, commenting and reflecting on a wide variety of aspects of her home, social and university life. Her second entry of two and half A4 pages introduces many issues that follow through in her journal writing and portfolio work. PU comes across as a shy student, "I don't like [to be] the one who gets all the attention" and writes about the pressures from her friends to socialise more and get a boyfriend, "the truth is I really want to be that get up and go person", but "I want to devote my time and effort to university ... I don't need to be in a relationship or rather I don't need a relationship to define me" (LJ).

After a whole page devoted to the pressures of friendships, she returns to her team and project work, "today was the first time I got irritated with my group members but just kept calm". She describes her unhappiness with aspects of their submission, "I feel that our

standard won't meet up ..." (LJ). Her individual portfolio work comes up for the first time (with 4 days to go) "I haven't started my portfolio as yet, but I have an exact idea of how it should look i got my carreer just need to type it and then ja it'll be ok???" (LJ). She describes being tired as she writes, "but I feel writing down all my thoughts will help me in writing my reflective portfolio piece" indicating an understanding of what the journal writing is all about.

She finishes this long entry by reflecting on "intelligent people" and how "I admire their hard work and determination, ... few have the drive to reach their dreams, hopefully someday I'll be a part of that few ☺". She admits that she still needs to do her pre-reading for IS but that "I'm actually enjoying the interaction in class ..."(LJ).

PU identifies Database Administrator as her chosen career and backs it up with some good research, producing a good job profile, and appropriate SWOT analysis. In her SWOT discussion she identifies that "A tertiary qualification only provides technical knowledge, so to be competitive in my career my aspirations would be [to be] more assertive in my approach, have strong verbal communications, be organized and effectively manage my time" (PF1). Her learning contract to meet these development goals has some *relevant resources and strategies*, with some more detailed thinking needed over evidence and validation.

In her reflective review, PU describes some of her challenges "my concern with the portfolio was the limited time; although it required a little output it required a lot of input; research, ideas and much thought" (RR1), demonstrating her *engagement* with the task. She states that "Public speaking, leadership, time management are the goals I need to work towards as these are the fundamental things which will improve my communication between colleagues and other not just in my career but on a daily basis" (RR1), indicating *felt needs* as well as an *awareness of her strengths and weaknesses*. She adds, "I feel that I do have the capability to succeed but not enough sustained motivation to carry it long term" (RR1). She ends her reflective review with the thought that "With the constant changing technology so does the requirements for careers change, in any career especially my own, motivation, experience and the continual aptitude to learn are the foundations of a successful career ...", indicating an *understanding of the purpose of the PDP.*

The day after submitting her first portfolio, PU underestimates the value of the content of her portfolio, especially in terms of her *reflective and thoughtful engagement*, "wouldn't say it was the most professionally done ... saw one of my group member's portfolios and it looked really good. I felt really embarrassed. It showed that I don't take the initiative and that needs to change" (LJ).

The following week PU is frantically busy and reflecting on how the team coordinator is running things. "Whooa ... our project coordinator has some issues ... doesn't look like she's managing the team ... rather she's worried about getting her contribution done" PU overhears her telling another team member "that she'll hand in her stuff and if we don't thats our problem and that she'll just work harder exam time ..." (LJ). PU is unimpressed "... and if one team member slacks we should motivate them to work harder not threaten them ..." (LJ).

In another two and a half page entry, PU goes on to talk about social problems with friends and in the project team, and goes on to think through the option of moving out of home as things aren't going well there. She uses her journal as a sounding board and often just seems to "core dump" many of the week's problems, thinking them through in her writing. She also starts bringing up the changes in her *approach to her studying* this year. "I'm starting to have a proper 'student schedule' staying up really late and waking up early ... last year was totally a slack year for me, this year will be my change ..." (LJ).

The following week test results are not looking good and PU is starting to worry about her Visual Basic (VB) programming and the looming statistics test. She does however say that "my failure right at this moment is jst [just] temporary. I know that I am going to work hard and not give up even though at times I may be failing ... In short my failure will not cause my downfall ... I will be motivated to work damn hard" (LJ).

In subsequent entries she returns to her previous year of study, commenting on how she "wasted my potential not to mention my mother's hard earned money ...", and that a "huge brain makeover is underway ..." (LJ). She once again demonstrates *self-awareness* when she says that "I realised that I'm not the type of person that can balance my academics with my social life ...", and prioritises "my social life doesn't seem that important for now ..." (LJ).

Despite *self-reflection, self-awareness and engagement* in the journal, PU seems totally unaware of how well she is doing in her PDP. "This portfolio project is really stressing me out. I feel that it might just cause me to fail IS IIA" (LJ). She seems overwhelmed by work and unhappy with her project team coordinator. "The team leader thing is one of my main concerns our current team leader is by far not doing a good job. Although she is keeping time management, I feel that she does not bring us together as a team ..." (LJ). A few days later she reports further that "our second milestone is finished and the process ... was very agitating. I find S a nice person but not a very good project manager ... very blunt as well as abrupt ..." (LJ).

Opening another marathon journal entry PU expresses her approach to journaling as "I think I rather accumulate my thought over a period of time and "splat" them all down" (LJ). In amongst her on-going concerns with passing tests and essays in other courses, she expresses disappointment in her progress "this year was suppose to go well and it doesn't seem to be ... my fear of public speaking ... one of my development goals ... well lets just say I'm not progressing". "Info Systems IIA doesn't seem enjoyable … it is an entirely interactive lecture ... which I hate especially if I'm the one thats interacting. I don't have the confidence to volunteer to answer ... let me stop here this is quiet depressing ..."(LJ). Before ending off, PU comments more positively on the approaching submission of portfolio 2, "I'm kinda looking forward to it hopefully the way I set out to start my portfolio will be the same when I end it" (LJ).

As the deadline for the next portfolio approaches along with the end of the first academic block, PU starts writing slightly shorter (1 page) entries on an almost daily basis. She *reflects on her learning* and *personal growth*, "I feel that I've learn't more in the past 4-5 weeks then the whole of last year. Time is important as well as maturity ... I'm taking my studies more seriously this year cause I know the benefit I'll get later" (LJ).

For the first time PU brings up the feeling of not wanting to write, in one of her entries, "I don't feel like writing much , there's not much I've got to say, and not feeling emotional ..." hinting that her journal is an emotional outlet for her. The next day she's back, reporting that "at times I seem to be all jolly and the next all choked up". She also reflects that "I realised that each day should be a learning experience even if it is just one thing I learn or experience that will benefit me then I'm all up for it" (LJ). Several days later, "Gosh! Gosh! I'm really panicking now, I'm not entirely done with portfolio 2 and its due this Friday ...! Reflective writing is such a pain, I thought of it as a good way of self discovery but its really lame and boring especially when you writing your thoughts down for marks!!" (LJ) In her review sheet of her portfolio 2, she also rates her level of journaling as partial, despite being one of the most expressive and prolific writers in the group. Her result for portfolio 1 also surprised her "I'm absolutely shocked out of my mind! Can't believe I got 75% for it. I'm totally amazed in a good way, I thought I would have got an extremely lower mark for it" (LJ).

Despite wanting to work on leadership and perhaps because she has identified assertiveness as a development need, PU has been given the last milestone to lead, "[it] seems far off but looks like seemlingly [sic] hard work". She continues to carefully analyse her team members and their efforts at team coordination while she awaits her turn. The team mark for milestone 2 is a disappointment and PU looks to the leadership as contributing to the problem, "she did not properly set things out, she felt she was in charge and that nothing

else matter except for us bringing what we needed to bring" (LJ). She reports that "I have definitely not made any progress concerning this [leadership] goal and I'm starting to realise that I do not have the qualities of a leader; in fact I function quiet well by following instruction. Nevertheless I do not want to change my leadership goal as I feel that *leaders are not born they are made*" (LC2). Despite their friendship, her feelings towards the new team coordinator are mixed "she definantly does not have the skills to be a good team coordinator ... a bit weak especially in the organising of meetings and she lacks assertiveness ... but she is a million times better than S thats for sure!" (LJ).

PU reports some progress with her time management goal in her second portfolio, "I'm more conscious of time and I prioritize the work that I have according to the importance or submission time. I was really delayed in the starting and completion of portfolio 1 which really stressed me; I got started as soon as possible with portfolio2" (LC2). She demonstrates good *self-awareness* in identifying a problem, "One of my difficulties is slacking off when I'm almost close to complete with certain work or with general things" (LC2).

She also credits her bad experience with portfolio 1 as helping with her goal of systematic planning, "I think the reason for my delay was that there were too many things that I needed to do ... I did not plan properly" (LC2). "I have tried organising and keeping track of work by keeping a diary ... I have started assigning work according to submission dates by keeping a calendar ... This change is gradual and improvement is showing in my approach" (LC2)

She reports that her public speaking goal is one she would want to change "because of my intense apprehension" but that "I have taken the initiative in dealing with it" (LC2). Having told her team members of her goal, they identified the team presentation that they had to do "as an opportunity for me and encouraged me to do the presentation, I obviously tried to get myself out of it ... they were adamant on me doing the presentation ... I was terribly nervous ... it did help me feel confident after I had completed it" (LC2).

She describes her portfolio 1 experience as her critical learning experience in portfolio 2, and reflects that it "got me thinking of my bad time management and planning ... and lead me to realise I need to have a continuous standard in my work ethic." (RR2). She concludes by saying "the only way that I will truly 'develop' is through my own undertakings ... I would have liked to see a dramatic and lasting improvement in my time management and planning goals – *change is a gradual process ... better the little achieved than nothing at all*" (LC2). PU appears quite willing and able through her writing to *reflect honestly* on both the *positive and negative* aspects of her efforts and progress.

As the third phase of the PDP progresses, PU starts feeling overwhelmed. "Gosh writing in this journal is becoming really irritating theres so much I have to do and so little time" (LJ). She reports feeling "relief and irriatation" at an extension granted, "irritation due to me not finishing it off" (LJ). She is unhappy with her project work "I feel that my contribution was limited ... I didn't do a good job as my time management is falling to pieces" (LJ). She describes how "this week was supposed to get me up to par with most of my courses but it seems like am getting more and more ... [behind] ... I am doing each of it in an allocated time but my mind can't handle it! ... I really feel sick to my stomach with varsity and I still have to do vb programming, o the complaints ..." (LJ).

A few days later, she is still behind, "I'm writing stats on Thursday and really don't feel prepared even though I thoroughly studied for it ... As for my programming project I'm way behind" (LJ). She describes thinking about her friend studying dentistry and her workload, and confesses "I realise how lazy I really am and how my complaining is not going to get me anyway but de-registered!!" (LJ).

She continues to battle on, "its been a while since I've written, I've been really busy but it doesn't seem like my hard work is paying off ... I thought IS would be enjoyable ... well I am enjoying it. Just not the marks!" She got 49% for an IS test and failed her second stats test. "I really don't know whats wrong Im really disappointed beyond belief" (LJ). She returns to her complaints about the journal but resolves "to try to keep up the writing because its only a few weeks more (LJ).

As the last stretch of term starts, PU digs deeper in exploring her learning and progress, explaining how "I've realised that thorough preparation is needed at university as well as having an inquisitive mind and not forgetting motivation and a hard working attitude ... I've decided to study each subject a few hours every day so that it can build up to when i actually write a test or exam instead of stressing ... my attitude readjustment starts from today and will see how it goes!" (LJ).

PU is also feeling positive about the new team coordinator, "I know that she will be a good team leader as she has every trait of one ... which is good". She is however feeling "undermined" by a fellow team member "T seems like she's joking but I don't like it but can't blame her cause I do the same". She comments that "its funny how emotions change, a few months ago I cared what people had to say about me now I really don't cared cause i know myself and do things to make me feel good" (LJ).

In her last few entries, PU describes the on-going ups and downs, the stress of leadership and the mounting academic demands. "I feel like im losing it!! ... so much to do and so little time ... i'm stressing out as i'm the team leader ... and well i really don't like

leadership especially where marks are involved!!" She is sticking to her time management plans and "doing a bit of each thing i.e studying in moderation each course which is good" and feels "a sense of urgency which is good cause I won't laze around", but also mentions being "on the verge of brain freeze or should I say information overload" (LJ).

In her final portfolio PU describes her *goals, approaches and successes and failures* in quite some detail. She has also asked her team mates to rate her level of improvement from their perspective for each of the 4 goals. She continues to demonstrate good *self-reflection and awareness*, reporting doing "an ok job" leading the team for the final milestone, reasoning that "as I'm not an assertive person I found it hard to lead my group" (LC3). She also demonstrates *perseverance and optimism* "I expected more out of my role as team leader ... but with the limited time this was to be expected ... I would want to take up a leadership role again as I feel that one should not give up and that experience breed's perfection" (LC3).

Across her other three goals, she also reports mixed success in her typically straightforward way. On the subject of time management she reported that "I found time management a vital goal as this semester was hectic with respect to workload, and I found this goal applied in everything ... I need to grasp and maintain [this]". She realises a link between her goals, "my time management goal and systematic planning goal are related because if you have effective planning time management flows through ... So I feel that systematic planning should be a lifestyle change as well relating to every aspect of my life not just university" (LC3).

In her final reflective review, PU describes her initial view of the PDP as neutral, which became more negative as she started with the plan, "I found it unnecessary and a waste of time as there were many other things I needed to do." (RR1) She does however start to bend a little "in doing the different portfolios ... I realised it was necessary" (RR3). She describes how "I was eager in starting my goals as I thought it would be achievable within 5 months time ... but I realised how hard the actual undertaking of a goal is. It's easy to state goals but another in achieving them as there has to be an incentive or lasting motivation for me ... I haven't totally reached it but it is in the process" (RR3).

PU ends her written journey expressing relief, "handing in this journal tomorrow, thank the heavens. I missed out a lot of days writing in this journal as i felt really stressed out beyond belief ... i'm really starting to realise how much work is [still] ahead and if i don't wake up now then it will be to late ... Getting this journal off my hands will be another blessing – THE END !!! ☺ "

PU received marks of 75%, 83% and 76% for the 3 portfolios respectively, wrote prolifically in her learning journal throughout the period, and achieved a mark of 47% for the exam.

4.4 Drawing Together the Individual Experience to Investigate the Collective

The journeys above portray a representative sample of the self-directed journeys undertaken by this cohort of students as they completed the PDP. While these journeys each represent a unique and specific engagement with the PDP, many things emerged from these journeys that reflect particular aspects of the PDP experience more broadly.

Reading and analysing the stories individually and as a case, I return to the two main research questions of this study in chapter 5, in order to explore each in turn using the defined sub-questions as guidance. In approaching this second layer of analysis, I emphasise an evaluative approach in the case of the first research question and a more exploratory approach when considering the second aspect of the research project. In the final chapter of the report I present further reflections, overall findings and conclusions to this study.

Chapter 5: Presentation and Discussion of Research Findings

5.1 Introduction

In this chapter I extend the analysis undertaken and presented in chapter 4 by using PDP related documents and a cross-study of the eight student narratives developed previously, in order to examine the research sub-questions developed for each of the two main research questions. Throughout this chapter I incorporate aspects of the literature covered in chapter 2 which relate to the questions and student work under discussion.

I begin by focusing on the first research question in which I examine the Personal Development Portfolio (PDP) in order to identify and understand the ways in which it delivers on, or fails to meet, the goal of providing students with exposure to, and learning opportunities through which to develop, self-directed learning skills, attributes and values. As described in chapter 3, I am using an evaluative approach to this question, seeking to both understand and evaluate the particular situation.

In the second part of this chapter I turn my focus to the second research question, which examines the possible contribution that the application of change management and organisational development principles, theories and frameworks can make towards mediating the change inherent in the previously unfamiliar pedagogical approach of Self-Directed Learning, thereby facilitating student adaptation and success. In this case the approach is more exploratory in nature, but I again draw on student experiences as portrayed in their narratives to focus on research questions Q2 (a) – (f), as well as on the PDP documents contained in appendix B.

5.2 Evaluating the Opportunities for and Achievement in Developing SDL Related Skills, Values and Attitudes through Completing the PDP

5.2.1 The Perceived Value and Importance of SDL to Students in Relation to their Future Careers - Q1(a)

Very few students commented directly on the value or importance of SDL in relation to their future careers. ED, one of the strongest students, initially dismisses the PDP, "At first I thought this was just a run of the mill research piece that would serve no meaning ... I was even annoyed to discover what comprehensive research was required ..." (ED-RR1).

However, a short while later she realises that "... the field is not really about how much you know. With rapidly advancing technology and languages and tools being constantly invented, it is rather about how much you are prepared to learn and whether you will be self motivated enough to teach yourself" (ED-RR1). In this, she expresses the need for willingness and motivation for learning, rather than ability. She reflects further on the PDP as "an opportunity ... to seriously consider the future, and a wakeup call. It felt good to try and create a plan ... to improve myself for the future" (ED-RR1). A last comment on the importance of SDL relates to difficulties she'd been experiencing "I must be willing to persevere and overcome difficulties ... The IT and IS environments evolve rapidly and it is essential ... to be confident in my own ability to learn continuously if I am to become part of the professional environment" (ED-RR2).

JN only briefly mentions some value in SDL right at the end of her final reflective review, "looking back, I understand the relevance of this development plan to my studies and my career in the long term." (JN-RR3). She does however, like the majority of the students, reflect at length on the value of the PDP. The PDP benefits are addressed by another research sub-question in section 5.2.5 below.

Another student to recognise the need for on-going learning is UG. He acknowledges the constant change in the IT world and the need for "an IS professional to be open and willing to try new forms of technology" and states that although "there will always be aspects of technology that I do not fully understand or skills that I am not particularly good at, the important thing is not to give up and to persevere until you reach your goal" (UG-RR2). His final journal entry ends with the statement "I have embraced this change and now, I am never looking back!" (UG-LJ).

The only other student to indicate perceived importance of SDL is PU, who ends her initial reflective review saying "With the constant changing technology so does the requirements for careers change, in any career especially my own, motivation, experience and the continual aptitude to learn are the foundations of a successful career ..." (PU-RR1).

The lack of much recognition of the value or importance of SDL and LLL by the majority of the students, despite a fair amount of recognition of benefits arising from participating in the PDP (as discussed in 5.2.5), indicates that the majority of the students did not fully grasp the reason or motivation behind the introduction of the PDP. This is a critical issue, in that it may well explain some of the lack of initial (or in some cases, continued) interest in doing the PDP and the resistance expressed by some students at various stages of the PDP.

Morton et al (1999) report one of the challenges encountered in introducing learning contracts and self-directed learning as part of a final year law program, was a lack of

internal motivation. Despite being voluntary, many students felt pressurised into doing the program in order to enhance their résumé, and their motivation was therefore external. Knowles (1984) does not believe external motivation to be sufficient to drive self-directed learning.

Grow suggests that Stage 2 students are "... available. They are interested or interestable. They respond to motivational techniques. They are willing to do assignments they can see the purpose of" (Grow, 1991). This implies that a different approach must be adopted in order to convey the potential value and importance of SDL to the students at the outset of the PDP as they should in theory, participate more readily if they have sufficient motivation to do so.

5.2.2 Learning Opportunities in the PDP for Developing the Necessary Skills for Successful SDL – Q1(b)

I examined the learning opportunities provided in the PDP for developing the necessary skills for successful SDL by doing a detailed analysis of the various documents given to students that both outlined the requirements of the PDP, or specified the assessment criteria by which each portfolio would be assessed. These documents are included in appendix B and referenced throughout this section. I also comment on any briefings and interactions that occurred related to each of the portfolios. This section does not look at student responses to the PDP; these are examined in the next section. Table 3.6 in chapter 3 is used to guide the analysis and organise the discussion of the opportunities provided by the PDP for developing the necessary skills for successful SDL.

As set out earlier in chapter 2, the required skills for SDL were defined by Knowles (1975a, 1975b, 1984, 1986) and Tough (1979) as being the ability to self-analyse and diagnose learning needs and set appropriate learning goals, to develop a learning plan or contract to achieve the goals, specifying appropriate resources and strategies, to implement the plan and evaluate the learning. Similarly Brookfield (1985), Candy (1991), Candy, Crebert and O'Leary (1994), Duffy and Bowe (2010); Hiemstra (1994), Knapper and Cropley (2000), Knowles (1984) and Schön (1991) define characteristics of effective lifelong learners as the ability to: set learning goals; identify and apply appropriate knowledge and skills; undertake self-evaluation; identify and obtain required information, and use varying learning approaches. Time management and organization are seen as critical for SDL by Guglielmino and Guglielmino (2003).

5.2.2.1 Self-analysis and Diagnosis of Learning Needs in Terms of Knowledge and Skills in a Specific Context

As shown earlier, Brookfield (1985) argued against the assumption that all adults are by nature self-directed learners, with clearly and correctly defined "felt needs", suggesting that educators have a responsibility to provide guidance and support to learners in determining their educational needs, while still acknowledging the importance and role of the learner in determining what they wish to learn. Hiemstra (1994), agrees that learners need support in learning the skills necessary to successfully carry out SDL, but suggests that creating opportunities for some learner control is, in most cases as important if not more so, than the content of what is being learnt. Knowles (1975, 1984) supported the idea of incorporating SDL into formal learning environments and defines an approach that includes creating a climate for adult learning and involving learners in the various aspects of planning, designing, implementing and finally assisting in evaluating their learning.

Using Brookfield, Hiemstra and Knowles as guidance, the overall concept and approach of the PDP was geared towards creating a climate for adult learning, in which students could take some control over what and how they learned, in a structured and supportive context.

As the majority of students are not yet working in the IS field, they do not as yet have any 'felt needs' (Brookfield, 1985) to work towards. Moreover, as emerged in 5.2.1 most students are unaware of the value or importance of SDL in either their working or personal lives. The PDP therefore creates a context and structured approach towards creating an awareness of possible future needs relating to possible or intended careers.

As described in chapter 2, the focus of the PDP is identified for students as "Our focus in the Portfolio of this project is to allow you to focus on your emerging **IS Professional Identity** – to think about **your** particular career aspirations and to focus on developing yourself towards these goals" (PF1r). Students are then introduced to the requirements of the PDP, the first two of which involve self-analysis and the diagnosis of learning needs in terms of knowledge and skills in a specific context, through researching real advertisements for their 'dream jobs' and creating a profile of the knowledge, skills, values and attributes of the 'perfect' candidate for the position, and thereafter doing a self-analysis of their current suitability for the job.

Context is created through the need to

> Choose a dream job in the IS or IS related field", while guidance is provided through the requirements to "Look at the advertised requirements and do some research on similar types of roles or jobs ... draw up a profile of the type of person that would be "perfect" for the job. Include the knowledge, skills, experience, attributes, interests, attitudes, etc. that such a person would ideally possess (PF1r).

Furthermore, students are given the opportunity to identify gaps in their knowledge, through the requirement to "compare your current level of 'qualification' for your dream job when compared to the profile developed in 1 above" and structuring their analysis;

> Do a SWOT analysis that helps you to position yourself against the required criteria as identified in your chosen dream job or role, and shows you where your strengths lie, which weaknesses you need to work on, what opportunities this course and project present for personal growth and development, and what threats to try to avoid (PF1r).

Students are given a briefing on PF1 in which I take them through the requirements document (PF1r) and also explain the motivation behind the project in terms of SDL and LLL. A detailed rubric describing the criteria for the job description, job profile, SWOT analysis content and SWOT analysis discussion (PF1f) is given to the students with the portfolio 1 requirements, and is referred to in their class briefing on PF1.

5.2.2.2 Defining and Planning Learning Goals or Tasks

The third requirement for PF1 is to create a Personal Development Plan based on the Job Profile and Personal Analysis undertaken as described above. Students are asked to

> create **your own development plan** for the first half of this year that focuses on **two or three** aspects of the knowledge, skills, values, etc. that you need to acquire or develop during the next couple of years leading up to landing your dream job. Use the guidelines on Ignite to help you draw up this learning plan.
>
> Try to be realistic when drawing up your goals – keep them focused, manageable, and achievable in a relatively short space of time. The idea is to work towards a sense of development, growth and achievement – not to feel swamped and defeated, but at the same time try to stretch yourself a little. You do not need to reach the final point for a goal, but should show some progress towards it. (PF1r)

Students are given a template (LCtmp – appendix B) on the learning management system (Ignite) to guide their development plan, which gives them structure in terms of defining and planning their learning goals. The template is based on Knowles' learning contract (1975, 1984), with the headings for the template and example entry shown below in figure 5.1.

Students are therefore given the opportunity to control what it is they wish to learn or develop, how they undertake the learning or development, the timing or pacing of the learning, and finally how they are going to measure and demonstrate their achievement towards their learning goals. Grow (1991) suggests that Stage 2 students should be involved in defining goals and encouraged to think about learning styles, strategies, and so on, in order to support their development towards self-directedness in learning.

Learning or Development Objectives (What are you going to learn ?)	Resources and Strategies (How are you going to learn it ?)	Target Date for Completion	Evidence and Validation (How are you going to know that you have learned it? How are you going to prove that you have learned it?)	Motivation (Why is this an important goal for you?)
E.g. Leadership	e.g. Reading of books or articles e.g. Online web searches e.g. survey of project team	e.g. MS 3	e.g. I am going to provide a list of readings and comment on valuable points or insights that helped me understand leadership and made me feel more confident. e.g. I will ask my team to do a peer evaluation of my leadership skills or improvement…	I would like to lead systems development projects …
E.g. Time Management				

Figure 5.1 Extract from Learning Contract Template

5.2.2.3 Reflecting on Personal Achievement towards Learning Goals or Tasks and Appropriateness for Purpose.

Self-Reflection and reflective writing is built into the PDP across all three portfolios, as well as through the use of a learning journal.

In PF1 students are asked to reflect on the overall concept of the PDP, as well as on their particular learning and development goals.

> ... Now use your journal to write a summarized reflection of how you feel about this portfolio and the opportunity to direct some of your own growth and development. You should reflect/comment on your chosen areas of development and how you plan to work towards your goals. Use ideas and quotes from your journal in your writing (PF1r).

In portfolio 2, students are required to do two things. Firstly to update their personal development plan, and secondly to write a Critical Incident Report as their reflective writing piece. In updating their personal development plan, students are asked to

> Show the progress you are making (or not making) towards your goals. Describe the learning activities you have tried during milestone 2/portfolio 2. What successes or difficulties are you having? Why? What are your plans relating to these? (PF2r)

This allows students to focus on what they have been doing towards their learning goals (or to encourage some activity if required) and to start thinking about their level of achievement towards the goals. This involves students early on in the evaluation of learning (Knowles, 1975, 1984; Tough, 1979; Hiemstra, 1994) and provides for formative feedback from both myself as facilitator, as well as from their own reflection.

Students are also given the opportunity to review and update their learning goals in PF2. They are able to add or remove goals, as well as make changes to the strategies and resources they specified, the target dates for progress or achievement, as well as the evidence or processes they will use to measure their development against their goals. "Show any updates or changes you are making – change of focus, goals, learning plans, etc. What motivated these changes?" (PF2r). This continues to provide support for learner control over their learning as they have the ability to adjust what they are doing and how they tackle the learning and development tasks (Knowles, 1975, 1984; Tough, 1979; Hiemstra, 1994), based on personal achievement to date, and the appropriateness of the learning contract as experienced by the students.

The Critical Incident Report is used to encourage students to see their learning and development as an integral part of everything they do; that learning and development can be realised as much through failure and obstacles as through success, if they reflect carefully on and learn from events. The Critical Incident Report asks students to

> focus on **one** single incident (or series of related incidents) that has occurred during the project or course so far, and has had a direct influence on your learning or development goals ... In what way did it help (or possibly hinder) you in achieving your goal? ... provide some background or context, a detailed description of what happened, your feelings about the incident, how it shaped or hindered your progress towards or achievement of a learning goal, and what you learnt from the experience as you think back on it ... keep writing in your learning journal each day ... What is motivating or frustrating you? How can you use this in your growth and development? Has this taught you something about yourself, your learning? ... (PF2r)

Students are strongly encouraged to use their learning journals throughout the PDP as a means through which to both record and reflect on their learning and development.

> Try to write in your learning journal each day – a mix of reporting what you did or anything significant that happened, as well as some reflective writing on these events. How did they support your development or learning (or hinder it)? What did you learn? How do you feel? (PF2r)

Finally, portfolio 3 provides students with a chance to both demonstrate and reflect on their achievements and difficulties as experienced through participating in the PDP. Students are asked to

> Update your Personal Development Plan. Show the progress you have made (or not made) towards your development goals ... describe and/or discuss ... initial goal and motivation, proposed resources and learning activities, actual learning activities undertaken and show evidence of how you undertook or used these (refer to items that you have included in the portfolio of evidence as detailed below), successes or difficulties you had and why, your overall feeling relating to this goal and the learning process (PF3r).

Students also create a Portfolio of Evidence to support their descriptions of learning and development in their updated learning contract, and complete a further piece of reflective writing. In this final reflective review, students are asked to

> **focus on your overall experience of creating and "implementing" your own personal development plan** ... Describe how you felt about the requirement to do one, level of motivation in attempting to achieve your goals, its perceived relevance to your studies and long term career, and the overall experience. Describe briefly your highs and lows, what you learnt, difficulties, successes, frustrations, etc. Use quotes from your learning journal to illustrate these feelings or points. (PF3r)

Learning Journals are also submitted with the final portfolio and are assessed on indications of effort rather than on the content. Assessment of the PDP is focused on the process and level of engagement of the students, rather than on what students undertake (apart from its relevance to their career development) and on how much they actually achieve.

5.2.2.4 Management of Time and Organising of Learning

Guglielmino and Guglielmino view time management and organisation as being critical skills for SDL (2003). The PDP is structured in three parts to help students plan and manage their learning over the available period of time. Portfolio1 is given to the students early in the semester, and during a period in which the intellectual engagement of the course and team project is not overly demanding. The learning contract requires students to think about time management when specifying completion dates, but does not otherwise enforce or recommend specific time management controls or guidelines.

Portfolio 2 is designed to support student progress towards their learning goals by requiring them to reflect and report on progress a few weeks into their learning. In this way students who are not focusing on the development tasks or plan are reminded of what they should be doing and encouraged to undertake some work towards their goals.

The use of a structured learning contract is also designed to support a more organised or systematic approach to learning for the students. The requirement to define the learning goals, strategies and resources, and so on for each goal, is designed in part to help students to organise their approach to their SDL.

Poor time management, procrastination and lack of a systematic approach among other things, surface as challenges for the students in completing the PDP as discussed in the following sections.

In the next section I revisit the skills discussed in this section (5.2.2) but change the focus from evaluating the opportunity provided to develop the necessary skills, to examining evidence of student learning, development or engagement with the skills.

5.2.3 Evidence in Student Work of Necessary Skills for Successful SDL – Q1(c)

In moving the emphasis in evaluation from the opportunity for developing SDL skills to looking for evidence of actual development of these skills in students, the shift in data analysis moves from the PDP related documents to actual student submissions in the form of their portfolios and learning journals.

5.2.3.1 Self-analysis and Diagnosis of Learning Needs in Terms of Knowledge and Skills in a Specific Context

While some students appeared to have thought long and hard about potential jobs for the future and done a fair amount of supporting research, others appeared to have done very little. ED, JN, UG and PU all appeared to have chosen jobs which really appealed to them and had done research in identifying their dream job, and profiling the requirements. ED comments that "there is a lot of information on the web but its difficult to get a precise picture as it is a very big field" (ED-LJ) while UG is "astounded at the innumerable amount of careers there are in the IS field. This was an exciting discovery!" (UG-LJ).

OL appeared to have done little research, but chose a job well suited to his strengths and interests, having possibly identified his direction already. CI provides little actual evidence of research, but his writing over time indicates that he may well have done more than he includes. UF and KE both start out poorly on the PDP but for different reasons. UF submits nothing at first, then later submits PF1 with PF2, but his job profile is simply a cut and paste from a careers website. KE on the other hand seems to be battling from the start and submits a very poor portfolio that is assessed at 8%. He resubmits PF1 as recommended, producing a fair job portfolio but with little evidence of supporting research.

The students demonstrated mixed abilities in undertaking self-analysis of their current level of knowledge and skills in a particular context. ED, UG, CI and PU all produce good to very good SWOT analyses, with a fair level of detail and clear links to the job profiles that they constructed. JN and OL produce fair SWOT analyses but which lack detail, while KE battles to produce one. UF makes a fair attempt at a SWOT analysis identifying some appropriate strengths and weaknesses but undermines the process somewhat by his identification of opportunities that are rather passive and self-serving, "Few blacks are able to complete this qualification, Skills development initiatives by companies should benefit me, Affirmative action and employment equity should benefit me, IS/IT is a scarce skill, This is a growing industry" (UF-PF1).

Levels of self-awareness, in many cases, developed over the course of the PDP, with several of the students later identifying or recognising very different strengths and weaknesses to

what they had identified when undertaking their SWOT analysis in PF1. This growing self-awareness is evidenced in their learning journal entries and reflective reviews, as well as in their updated learning contracts and in the emergence of felt needs, as will be seen in the discussions below.

Students appeared comfortable in identifying jobs of interest for the future and further choosing aspects of the required knowledge or skills that they could work towards. The context provided by looking at jobs and job requirements seemed sufficient to provide students with a starting point for identifying development needs thereby avoiding Brookfield's (1985) caution of students not yet having established felt needs to address. Furthermore, the use of a structured approach of creating a job profile and undertaking a SWOT analysis seemed to provide students with sufficient support in negotiating the "paradox of choice" by helping them to prioritise goals, identify which choices are most important, and decide which options are most valuable or appropriate (Brockett, 2006, p 32).

5.2.3.2 Identifying and Defining Appropriate Learning Goals or Tasks

In identifying and defining learning goals for the PDP, students selected a variety of different learning or development goals. These were mixed in terms of specific suitability for their chosen jobs, and were defined with varying degrees of detail.

The majority of students focused particularly on goals that were fairly generic and could be usefully applied across a variety of different IS related jobs or careers. These included goals such as time management (OL, JN, UG, CI, KE, PU), leadership (PU), teamwork (UF, ED), public speaking (OL, CI, KE, PU), report writing (OL), communication (UG, KE), self-motivation (JN, CI), confidence (JN, CI) interpersonal skills (KE) and systematic planning (PU). In some cases student choices were well linked to self-identified weaknesses and job profile requirements. JN for example identifies "Self-Confidence" as an attribute of a project coordinator (her chosen job) and also identifies it as a weakness in her SWOT analysis (JN-PF1). In other cases the goals, while relevant, did not seem to have been chosen for any specific job-related reason. OL chooses "time management" as a goal which he doesn't mention either in his job profile or SWOT analysis (OL-PF1).

In choosing the more generic or soft skills, few students defined what they wanted to achieve with the goal; most simply listed concepts. ED explained her goal of team communication as "Able to effectively communicate with my group members for team work projects" (ED-LC2), while JN and OL simply list "time management, report writing, confidence". Similarly the motivations given by students varied from carefully thought out or weighed up choices which they linked to their specific career choices while others seemed

more arbitrary. CI explains how "effective time management" is important because "In my dream job I am going to have to keep track of time and manage my time and in some cases the time of others and the timing of the entire project" (CI-LC2). He also describes how "public speaking" is important "In hosting user workshop and presenting proposals to board members I need to be able to speak to groups" (CI-LC2).

In some cases the choices were either a response to a current or emerging felt need; like JN believing that self-motivation "is an important trait to have to aid with studying and completing work" (JN-LC) and ED adding time management as a fourth goal during PF2 because "I originally thought I was reasonably good at this but I have found that I have felt rushed and stressed this entire block in terms of finishing projects and studying for tests" (ED-LC2).

Students choosing more technical or specialised jobs or careers often had more focused or specific goals which were more readily linked to their chosen jobs. ED chose to learn html and Photoshop, both specialised technical tools which would be useful in her career as a user interface designer, while UG, wanting to be a systems analyst, chose improvement of programming skills and knowledge of system development methodologies as goals. Their motivations were also often more precise or specific. UG explains that "Good technical skills are a prerequisite if one wants to become a systems analyst. Therefore I will have to master this skill" (UG-LC).

While these students often also included some of the more generic goals, their definition of the goal and/or motivation behind choosing it was generally more specific or precise than the other students. ED, for example, chose aspects of teamwork as a goal, motivating that "I want to become comfortable in doing team work as most User Interface designers will work, in the very least, as part of a cross functional team ..." (ED-LC). OL, while choosing Programmer-Analyst as his dream job, surprisingly did not specify any technical learning goals which would have been both appropriate for the job and appealing to him in terms of his stated strengths and interests. Instead he chose public speaking, report writing and time management. OL's motivation for "report writing" stems from the fact that "Professionals in this field have to report to their superiors and it is mostly done in writing" (OL-LC1); while for his goal of "public speaking" he simply lists his motivation as "presentations, interviews".

5.2.3.3 Planning Learning Goals or Tasks

Students seemed to struggle most with this aspect of SDL, with the vast majority of students specifying very narrow strategies and drawing on a limited set of resources. They also battled to differentiate between strategies, and evidence and validation.

The use of online resources such as articles or websites dominated the list of resources, with Google being a firm favourite. Books were listed as relevant sources, and in a few cases friends or team members were mentioned. Some students identified the project teamwork as a source of experience which would help them to develop particular skills such as teamwork, leadership or time management.

Some students confused strategies with evidence of learning. For example, OL defines his evidence for public speaking as "I will speak on behalf of my team when necessary" instead of using this as a development strategy for improving his public speaking (OL-LC). Similarly, JN suggests "make a calendar of all important dates" and "plan ahead for the week" as evidence of improved management (JN-LC). In some cases, these strategies could also provide evidence of learning undertaken or progress made, if properly used or defined.

Few students identified other people as resources, though ED identified a friend to help her learn HTML, UG identified friends or lecturers as a source of help when learning programming, and JN identified confident people as a source of building confidence. However, several students identified friends, team members or family as possible input for evidence or validation of learning, with several submitting questionnaires which provided either self or peer rating of their improvement in aspects such as time management, leadership, and so on, as part of their portfolio of evidence.

Often the proposed evidence would be inappropriate as a measure of validation, and not even useful as evidence of learning undertaken, for example, "I will save the web pages that I use" (OL-LC) in support of report writing, or "getting more involved in lectures or tutorials" (PU-LC).

In general, across all the students, the learning contract, and in particular the definition of resources and strategies, and evidence and validation was the weakest aspect of the PDP. Consideration needs to be taken of the possibility of using a more collaborative approach to identifying possible resources and strategies for students to choose from, using group, class-based or other types of forums to generate and discuss ideas.

5.2.3.4 Undertaking Learning Goals or Tasks

Students managed to undertake their learning goals with mixed results; with interest, motivation and commitment on the one hand, and time and effort on the other, predictably influencing levels of success. The difficulties in planning the learning goals and tasks identified above, would also contribute to difficulty in undertaking them.

Issues with time management, conflicting demands on time and procrastination were all raised by students as limiting their ability to focus on the PDP and pursue their learning

goals. Some discussion of all these issues is raised in section 5.2.3.6. As most students had selected time management as one of their development goals, progress was made in this regard over the course of the PDP, which in turn helped students to undertake their other goals. Section 5.2.3.6 also reflects on this improvement by students in managing their time.

Stronger students such as ED describe making progress towards their goals. In updating her learning contract for PF2, she describes progress towards her teamwork goal, "Although I still dislike group work, I feel I have progressed ... I feel more confident in putting ideas in and taking charge if I need to" (LC2). She alters this goal to focus on communication in team work. "I have come to realize that communication is an on-going process ... I am finding it easier to talk in the group and I feel more confident ... but … I still feel awkward when speaking in class or to other people I don't know" (LC2).

She further reports having had little time to go beyond the basics of her second goal of learning HTML a web programming language. "I have not spent enough time developing this skill as I have found it difficult to set time aside for it, and to motivate myself to keep doing it, particularly in the last two weeks with the many projects due and tests I have had" (LC2). She rationalises her goals, continuing working on the HTML and deferring her third goal to the next semester.

Similarly, JN works steadily towards, reports on and reflects on her development goals throughout the PDP, describing her actions and progress. She identifies time management techniques that she is using such as "lists of work with deadlines I need to meet", "using a calendar" and "planning a schedule for my day in my personal diary" (JN-RR2). She also lists tips for self-motivation including to "stimulate your pain which entails thinking of the bad consequences of not completing tasks or meeting deadlines" and "also thought of what my team members might think of me if I was the weakest link in the team" (JN-RR2). She describes reading articles and "taking various confidence quizzes and tests" (JN-LJ, RR2).

In contrast to ED and JN, reporting on his progress towards his goals in PF 2, OL states that no progress has been made towards public speaking or writing and that "no resources have been used as yet". Although OL makes no changes to his learning contract in PF 2, his discussion indicates having considered several amendments. "At first I was thinking of changing my "Public Speaking" goal to "Teamwork Skills" but I decided not to change it. The main reason for that decision is that I already have some teamwork skills and it does not seem to be a big issue, on the other hand my public speaking skills are quite bad therefore it is one of my main goals that I want to achieve ..." (OL-LC2). He also mentions that "I had thoughts of replacing my goals with some easier ones that I would be able to achieve easily. Although that would help me now in the short term, I still require those

other skills for my career and things will get much easier for me if I start working on them from now" (OL-LC2). On the time management side, "there has been some sort of progress for this goal. I have been to all my lectures on time. The progress for this goal has been good because I was able to complete all my required work and still had time for sport and other activities" (OL-LC2).

UF had still not created a learning contract for PF2 but does write about his activities and progress relating to his goals. UF reports that "I am working very hard on fasttrack[ing] my intake of programming skills" and describes having worked on a program for a client, but having difficulties "because my coding skills are short" (UF-PF2). No mention is made of any plans to try to learn or develop the missing skills before they are taught sometime during the course. UF also claims progress with his goal of "learning as much as I can about the field of IT", based on "I have been learning a lot in class and in the research I do on the Internet" (UF-PF2). UF's third goal, relating to teamwork, seems to have featured strongly during this time, with several ups and downs described in his reflective review. UF reports that "this is one point where I have made the most progress" (UF-PF2).

UG, like JN, wrote daily journal entries as he moved into the portfolio 2 phase, describing how "I have begun to practice my VB and it shows. I was slightly more confident in class today". A few days later he reported that "I am pleased that my hard work is beginning to pay off" (UG-LJ). A couple of days into the PF2 phase, UG indicates that he has started working on the next of his identified development goals. "As per our Personal Development Plan I have begun researching, systems development methodologies and software programs. There is a wealth of information available on the web and it was an enlightening task." (UG-LJ) UG also added a 4th goal to his development plan, "I had made a great personal discovery during this time ... it came as quite a surprise to discover that good communicational skills are invaluable to a team leader. ... I am determined to further develop these skills." (UG-RR2)

Despite the fact that CI does not submit a learning contract or even state his goals in PF1, he started his journey by writing in his journal on issues or events that showed evidence of his progress towards his goals. CI's PF2 contains a full learning contract together with the required commentary on progress and changes to the original one. In it, CI lists public speaking as a goal, and categorises it as **ACHIEVED** (CI's emphasis) in PF2. His resources and strategies consist only of strategies ("I will present work during class", "I will speak more in group meetings" and "I will review my choice of words when speaking publicly to enhance the power of what I am saying") (CI-LC2), and his evidence of "Each time the group was required to do a presentation in class or the group had a question for the lecturer, I would speak out" (CI-LC2). CI's discussion of his other goals and progress is

more grounded and realistic: "In the area of time management I am making progress but it is very slow" and "I am having trouble with eliminating self-doubt" (CI-LC2).

KE seems to make very little progress on his goals throughout the period, with no progress cited, and only difficulties discussed. He describes juggling work and studies "sometime one face tradeoff between part time work and studies" and other commitments "I have joined 3 student societies"; "Time has never been on my side this whole teaching block, things move quicker test, assignment, etc." (KE-LC2). KE fails his IS tests and assignments during this time, and is working with a project team with several members who are also battling academically.

In common with JN and UG, PU is involved in an on-going reflection of her progress towards her goals through her journal writing. At times she expresses disappointment in her progress "this year was suppose to go well and it doesn't seem to be ... my fear of public speaking ... one of my development goals ... well lets just say I'm not progressing", while at others she identifies positive aspects of learning, "I feel that I've learn't more in the past 4-5 weeks then the whole of last year. Time is important as well as maturity ... I'm taking my studies more seriously this year cause I know the benefit I'll get later" (PU-LJ). She also reflects that "I realised that each day should be a learning experience even if it is just one thing I learn or experience that will benefit me then I'm all up for it" (PU-LJ).

PU reports some progress with her time management goal in her second portfolio, demonstrating good self-awareness in identifying a problem, "One of my difficulties is slacking off when I'm almost close to complete with certain work or with general things" (PU-LC2). She also credits her bad experience with portfolio 1 as helping with her goal of systematic planning, "I think the reason for my delay was that there were too many things that I needed to do ... I did not plan properly" (PU-LC2). "I have tried organising and keeping track of work by keeping a diary ... I have started assigning work according to submission dates by keeping a calendar ... This change is gradual and improvement is showing in my approach" (PU-LC2). PU describes how her public speaking goal is one she would want to change "because of my intense apprehension" but that "I have taken the initiative in dealing with it" (PU-LC2). Having told her team members of her goal, she was nominated to present for her team in class, "I was terribly nervous ... it did help me feel confident after I had completed it" (PU-LC2).

5.2.3.5 Reflecting on Appropriateness for Purpose of Defined Learning Goals and Personal Achievement towards Learning Goals or Tasks

Most students reflected on both their progress towards their goals during the PDP as well as on their overall success in achieving the goals. These reflections were found in their

learning journals, their updated learning contracts and in their reflective reviews. Only some of the students commented on the strategies that they were using and how appropriate these had been in supporting their learning.

ED completes her PDP work by reflecting on the process from the start, acknowledging her initial scepticism, resistance and superficial approach; "thus to begin with I was not particularly attentive or thoughtful beyond a superficial level why I would need to complete the goals, and the project was more a chore for me than anything else" (ED-RR3). Later however, "I had begun to realise that the development plan wasn't actually a joke and that I was going to have to get my act together ..." By portfolio 2, "I adjusted my goals during this portfolio to goals that were fully meaningful to me and tried very hard to set time aside to complete them." But "it was difficult, particularly as I was finding time management in the beginning of the term particularly challenging ..." (ED-RR3).

ED appears to have had some success using her strategy of online tutorials to learn a web page development language. "I have finished the beginner tutorials and can create a very basic website ... I really enjoyed following the tutorial and building my first webpage ..." (ED-LC2). She also displays awareness of the value of aspects of the LC such as evidence and validation, when she indicates that she "did not implement my plans of asking my peers for assessments as I felt awkward ... I did not keep a record of my thoughts as I intended to either which has presented a difficulty in assessing myself" (ED-LC3). She shows awareness of lack of self-management when she describes disappointment "that i have been so lazy in working towards this goal and realise that I should have appointed a specific time for myself to work on learning HTML ..." (ED-LC3). She also indicates thinking beyond the present "I have realised that this is a perpetual goal that I will have to work on maintaining forever" (ED-LC3).

At the end of the semester, ED submits a detailed and well thought through final PDP portfolio. Progress on all her learning goals is well described, and she comments on those learning activities undertaken in comparison to those she specified in her plan (ED-LC3). She presents a balanced and realistic view of her progress "I think my communication has improved drastically despite the difficulties. I think my learning process could have been more assertive, as I was quite passive in achieving progress in this goal ..." (ED-LC3).

JN had defined 'talking to confident people' as a strategy for confidence building and was delighted when this choice was validated in an article she read. She decided to follow through with her strategy and spoke to a friend who has done IS II already and "comes across as pretty confident to me". JN describes how she chatted to her about "my concerns and complaints about IS. She answered questions I had about groups, the workload and 2nd year compared to third year ... It made me feel better ..."(JN-LJ).

JN's final piece of reflective writing and her portfolio of evidence paint a strong picture of someone who is taking control of her development goals. She describes how "in the beginning of March my journal shows evidence that I had stopped reading up on the goals and was now trying to implement the guidelines ..." (JN-RR3). She then notes "that weeks passed and I saw myself becoming less concerned with these goals and at that stage I had to remind myself of them" (JN-RR3). She identifies the practical value of her strategies, "for example, drawing up a calendar with important dates and deliverables on it not only helped me to manage my time by planning my activities, it also served as a motivational device because it was a constant reminder of pending tasks that encouraged me to keep working" (JN-RR3).

On the other hand, at the end of the PDP, OL is quite open about his lack of effort and motivation. For his first two goals he states that "no learning activities were undertaken" describing his difficulty as "I was not prepared to volunteer to speak on behalf of my team" (OL-LC3). For his third goal in which he claims some progress towards better time management, he states that he "read online articles (1)" (OL-LC3) and that his success is "arriving at all my lectures on time and handing in all the required work on time" (OL-RR3). He explains that "It was hard for me to work on all my goals because of the other subjects… at times I would forget that I had to work on my goals" (OL-RR3). He expresses some disappointment that he did not "really accomplish any of my goals … because I actually did want to fully achieve at least one of my goals" (OL-RR3).

In portfolio 3 UF discusses his perceived level of achievement of each goal, and briefly mentions the resources and strategies he used. He claims some level of success in his programming "I think my programming skills are on par ... I can, now, programme with a much more superior understanding of what I am supposed to be doing' (UF-PF3). He feels that "I am still not able to do all that I want to be able to do on VB, but I think a large part of the reason is simple that I have not kept my computer with me for the last few months" (UF-PF3). UF's second goal was related to developing an understanding of the IT industry. He describes attending classes offered by the ICT incubator as a resource, together with internet reading. He feels he made some progress towards this goal.

UG describes how he started using his PDP to guide his progress towards his goals. "As per our Personal Development Plan I have begun researching, systems development methodologies and software programs. There is a wealth of information available on the web and it was an enlightening task." (UG-LJ) Later on in his progress review, however, UG describes how the sheer volume of information available "has left me feeling overwhelmed and confused". He further states that as the field is "constantly changing and evolving" he finds "it difficult to decipher which information is useful and which has become obsolete"

(UG-RR2). Finding that his planned 'strategy and resources' are not working, he updates them in his learning contract to include using an expert to help guide him in this area (UG-LC2).

UG seems to have engaged strongly and actively with his learning contract in undertaking all his goals. In working towards his time management goal, he describes how "I have begun to draw up prioritised 'TO_DO' Lists as per my personal development plan. I hope that it will help me to improve my time management skills." When UG is "highly stressed" but "trying very hard to remain positive", his development plan is once again updated with a new strategy: "TO-DO" lists are helping but I am going to start drawing up weekly plans as well" (UG-LJ). A short while later he reports that "Weekly-Planners are proving to be of a great help as I am becoming more time conscious and I procrastinate much less" (UG-LJ).

As the VB test and assignment approach, UG continues to reflect on his efforts and successes. "I have been neglecting my VB and it shows" and comments on how the approaching VB test affects his participation in the project work; "I was very stressed for the test and do not think I contributed as much as I could have to the draft". He shows an increased confidence in being able to draw on a wider pool of resources and strategies; "I will have to read up on it"; "I asked the tutors for help today", "I'm going to ask one of my team members for assistance", "I have asked someone for help ... I have a better understanding of it now and am pleased with the result". He also uses peer review on his communication skills with his team members "to see whether or not I had achieved this goal" (RR3).

UG's reflection on his participation and achievement in the PDP show a continued growth as a SDL. He reflects honestly and thoroughly on the process and his achievement as evidenced above in his quotes, showing awareness of the need to look backwards and forwards in reflecting. He identifies his breakthrough point as being after experiencing some success relating to his PDP goals, citing fear of failure as a blocking factor prior to that. In analysing his achievement towards his goals, UG rightly claims to have made progress towards all of his goals, acknowledging room for on-going improvement in all of them.

In reflecting on his achievements in PF3, CI describes how "some goals I viewed as more important and my efforts and motivation towards achieving them were according to that" (CI-RR3).

In her final portfolio PU describes her goals, approaches and successes and failures in quite some detail. She has also asked her team mates to rate her level of improvement from their perspective for each of the 4 goals. She reports doing "an ok job" leading the team for

the final milestone, reasoning that "as I'm not an assertive person I found it hard to lead my group" (PU-LC3). Across her other three goals, she also reports mixed success. She reports that "I found time management a vital goal as this semester was hectic with respect to workload, and I found this goal applied in everything ... I need to grasp and maintain [this]". She links this with planning, "my time management goal and systematic planning goal are related because if you have effective planning time management flows through ... So I feel that systematic planning should be a lifestyle change as well relating to every aspect of my life not just university" (PU-LC3).

In her final reflective review, PU describes how "I was eager in starting my goals as I thought it would be achievable within 5 months time ... but I realised how hard the actual undertaking of a goal is. It's easy to state goals but another in achieving them as there has to be an incentive or lasting motivation for me ... I haven't totally reached it but it is in the process" (RR3).

5.2.3.6 Management of Time, and Planning and Organising Learning

Identified by Guglielmino and Guglielmino (2003) as one of the important skills for success in SDL, time management and the related aspects of planning and organisation, appears to have been one of the greatest inhibitors for students in pursuing their PDP goals, with several issues arising. It was also a popular learning goal, with OL, UG, CI, KE and PU all identifying time management as a learning goal. Time management was also identified by JN as a goal in her LC, but her experience as team coordinator during this time may well have been a big contributing factor in this choice. "I spent most of today putting my file together ... I was really trying to avoid doing things last minute but things never go as I plan!" She further reports "I spent so much time putting the file and template together" and having to "reword literally every sentence that P and everyone else had written ... that I barely had enough time to do my portfolio" (JN-LJ).

ED responds to her experience of time management being a problem by adding a fourth goal to her development plan during PF2, "to improve my time management skills" (ED-LC2). "I originally thought I was reasonably good at this but I have found that I have felt rushed and stressed this entire block in terms of finishing projects and studying for tests" (ED-LC2). ED hopes to see immediate benefits in working towards this goal through being able to "apportion time for myself to study and work on projects each day, as well as being able to give myself slots for free time ... [which] helps me work better during the times I assign for myself to work." "I am hoping that by improving this skill I will reduce the amount of stress ... and will also allow me to hand in my best work, instead of rushing to finish" (ED-LC2).

Several students report conflicting demands on their time as being problematic. OL explains that "It was hard for me to work on all my goals because of the other subjects. It is hard to concentrate on too many things at the same time … sometimes I would have a milestone or portfolio due and a test in the same week … at times I would forget that I had to work on my goals" (OL-RR3). ED complains about the heavy workload across all her subjects "which is making me feel very stressed" (LJ). She is juggling to try to keep up "I missed this week's lab to try to catch up my marketing work which was really stupid because now I'm behind in programming again. Being behind makes me feel really incompetent" (ED-LJ). Juggling work, studies and other commitments is also making it difficult for KE to cope. "... sometime one face tradeoff between part time work and studies" and "I have joined 3 student societies". "Time has never been on my side this whole teaching block, things move quicker test, assignment, etc." (KE-LC2).

Prioritisation of other courses or other IS tasks over the PDP is an issue for some students. ED describes how "At first I paid little attention to [the PDP] as I was more concerned about having to get my group's milestone project [done]" (ED-RR1). "I am worried that I have left it very late" (ED-LJ).

Procrastination appears to have been a challenge for some students with JN reporting that "I finally decided to stop prolonging my work and started my research" (JN-LJ) and UG confessing, "I have been procrastinating ... once again I have been putting off studying for HR and Management ... There are so many chapters to read ... I must start implementing my time management strategy" (UG-LJ).

ED reports having "finally finished researching for my portfolio piece and started writing. I can see I have managed my time poorly – this piece is a lot more work intensive than I first realised and I have been so busy worrying about the milestone piece that I have neglected it" (ED-LJ). Other students also describe underestimating the time needed to do things, with KE confessing to spending very little time on PF1 "Honestly I didn't do the portfolio properly because I remember [it] took me 2 hours because I was busy doing the milestone" (KE-LJ).

On the positive side, students started identifying and experimenting with time management tools and techniques. JN reports that she is going to start using a detailed calendar to manage her time between tasks and short-term goals, because "our MS2 is a disaster. Although we said that we would not leave work for the last minute, its happened again ..." (JN-LJ). UG indicates that his 3rd goal is now really starting to emerge as a *felt need*. "I have begun to draw up prioritised 'TO_DO' Lists as per my personal development plan. I hope that it will help me to improve my time management skills." A little later his development plan is once again updated with a new strategy: "TO-DO" lists are helping but

I am going to start drawing up weekly plans as well" (UG-LJ). CI demonstrates how he learned from an earlier incident: "For the next milestone and the portfolio 2 deliverables I planned in advance, putting time in place for to space out the coursework I had to do ..." (CI-RR2). PU developed a time management plan which involves "doing a bit of each thing i.e studying in moderation each course which is good" resulting in "a sense of urgency which is good cause I won't laze around" (PU-LJ).

Most students reported some level of progress towards their goal of improved time management as they moved through the PDP. JN identifies several time management techniques that she is now using such as "lists of work with deadlines I need to meet", "using a calendar" and "planning a schedule for my day in my personal diary" (JN-RR2). She further demonstrates how important her improved time management is to her, "I'm just a bit annoyed because I have a clear idea of the work that I need to complete for each day up until next week and him [a team member] springing questions like the above to me shows that he doesn't" (JN-LJ).

UG, in reflecting on his progress against learning goals, describes how his time management goal has "helped him to stay focused ... As team coordinator, I was entrusted with many responsibilities and this forced me to use my time effectively so that the work of the team as well as my own work was completed on time" (UG-RR2). "Weekly-Planners are proving to be of a great help as I am becoming more time conscious and I procrastinate much less" (UG-LJ).

PU reports some progress with her time management goal in her second portfolio, "I'm more conscious of time and I prioritize the work that I have according to the importance or submission time. I was really delayed in the starting and completion of portfolio 1 which really stressed me; I got started as soon as possible with portfolio2" (PU-LC2). Later she adds "I found time management a vital goal as this semester was hectic with respect to workload, and I found this goal applied in everything ... I need to grasp and maintain [this]" (PU-LJ).

OL too seems happy, "there has been some sort of progress for this goal. I have been to all my lectures on time. The progress for this goal has been good because I was able to complete all my required work and still had time for sport and other activities" (OL-LC2).

Some students see time management as an on-going challenge "I have not spent enough time developing this skill as I have found it difficult to set time aside for it, and to motivate myself to keep doing it, particularly in the last two weeks with the many projects due and tests I have had" (ED-LC2).

As time management, planning and organisation appear to directly influence student progress and success in their SDL endeavours, it seems likely that encouraging more systematic planning and more frequent reviews in student learning contracts could help students (Guglielmino and Guglielmino, 2003).

5.2.4 Indications of Values and Attributes in Students Necessary for Successful SDL - Q1(d) and Aspects of the PDP that Encouraged These - Q1(e)

In examining the narratives of the students, clear demonstrations of the presence or emergence of several values and attributes necessary for successful SDL (see Table 3.6) are evident in greater and lesser degrees across nearly all the students.

Felt Needs

Fundamental to SDL is the concept of *felt needs* in terms of knowledge or skills which an individual feels compelled to address (Knowles, 1975; Tough, 1979; and others). As expected, very few students had *felt needs* when first defining their learning goals for the PDP, so development goals were established by asking students to look to possible future employment needs and to choose goals on this basis as described earlier and in PF1r (See appendix B). However, once working towards their development goals, many of the students either experienced their goals as current *felt needs* or added emerging *felt needs* to their learning contracts as the PDP progressed.

JN, for example, in defining time management as a development goal appears to be drawing on an emerging felt need based on her experience as project coordinator for the first milestone. "I spent most of today putting my file together ... I was really trying to avoid doing things last minute but things never go as I plan! ... I barely had enough time to do my portfolio" (JN-LJ). By the second reflective review, JN is "trying to find a solution to manage my time between personal time and time for studying by trying to implement tips" that she has found when researching for her goals (JN-LJ). Time management is also the focus in her critical incident report for her second reflective review.

UG too experiences how his time management goal is important to his current success, and describes how it has "helped him to stay focused ... As team coordinator, I was entrusted with many responsibilities and this forced me to use my time effectively so that the work of the team as well as my own work was completed on time" (UG-RR2). While leading the team, a further felt need emerged for UG, which was added his learning contract as a 4th goal. "I had made a great personal discovery during this time ... it came as quite a surprise to discover that good communicational [sic] skills are invaluable to a team leader. ... I am determined to further develop these skills" (UG-RR2).

CI also links his goal of time management to his day to day challenges: "This situation, I believe is teaching me the valuable [sic] lessons of managing time efficiently as to fit in all my acedemic work into the week ahead" (CI-LJ). He too added a further goal to his learning contract "namely self motivation. Self motivation is important for the fact that nobody is standing behind to push me to do what is required of me at this stage in my academic career, and in the work place and future career I want to pursue nobody will" (CI-RR2). He also comments in his final reflective review on how his original goals "were formed by direct influence of what I think my future career would require me to do, but it later turned out to be helpful skills to have in everyday life" (CI-RR3), indicating the emergence of felt needs.

PU on the other hand states upfront that "Public speaking, leadership, time management are the goals I need to work towards as these are the fundamental things which will improve my communication between colleagues and other not just in my career but on a daily basis" (PU-RR1) indicating a choice of goals in response to felt needs both currently and for the future.

ED, identifies "becoming comfortable with teamwork and communication with group members" as a development goal based on her future career as a user interface designer as she will have to work "at the very least as part of a cross functional team". She explains that she usually dislikes "working in a team in projects because I usually end up doing most of the work and organising ... this really frustrates me ... it is unfair and makes me very stressed" (ED-RR1). As the project progresses, ED finds herself working in a highly motivated and hardworking team, posing a different challenge: "I worry ... that I will allow someone else to handle everything rather than being involved myself as I am a more reserved person. I intend to ensure that I actively participate even if it makes me feel uncomfortable" (ED-RR1).

As part of her reflection on progress towards her goals and updating of her learning contract in PF2, ED also adds a fourth goal to her development plan in response to an emerging felt need, "to improve my time management skills" (ED-LC2). She writes, "I originally thought I was reasonably good at this but I have found that I have felt rushed and stressed this entire block in terms of finishing projects and studying for tests ... I am hoping that by improving this skill I will reduce the amount of stress ... and [it] will also allow me to hand in my best work, instead of rushing to finish" (ED-LC2).

OL's goals appear to be felt needs as they are fairly generic in nature and not particularly related to the technical specifics of his chosen job. Identifying public speaking / communication skills, report writing and time management as his goals, he comments on how "One of my main weaknesses is writing, that is why I don't enjoy these types of

portfolios" (OL-RR1). Another of his weaknesses is "public speaking, I also get nervous a lot in certain situations which makes me lose focus of the main objective" (OL-RR1).

Of the two weakest students, UF comes closer to making links between their development goals and their day to day experiences. Although UF's goals are fairly closely related to his current part-time work, he experiences his lack of progress as a stumbling block and seems resigned to waiting until the problems are addressed later in class as part of the curriculum. UF's first goal was "to fast-track my intake of programming skills" and while working on a program for a client, he describes having difficulties "because my coding skills are short" (UF-PF2). So despite the fact that improving his programming could have an immediate impact on his day to day life in being able to complete a part time job, UF comments that "I will have to hold off on my plans … as we have not done databases in class" (UF-PF2).

Reflective Learners

One of the most striking aspects of the students' SDL journeys is the openness and honesty to be found in their learning journals and reflective writing pieces. The majority of the student participants used their learning journals to reflect both on their experience of SDL as well as on their learning and progress towards their chosen goals. Characteristics looked for in reflective learners are inclusion of appropriate aspects in their reflections, honesty, both positive and negative issues being raised, and planning for the future (see Table 3.6).

Having started out "filled with a sense of dread at having to keep a journal", UG describes his feelings about the irrelevance of the PDP at the start both in his reflective review and in his journal; "Looking back to my first entry of this journal I have noticed how sceptical and negative I was about keeping a journal" (UG-LJ). A bit later he identifies the benefits of the journal as "a lifeline for me during this hectic semester", "my outlet to vent my pent-up emotions" and "a valuable tool in monitoring my progress throughout IS2A" (UG-RR1).

While writing a fair amount in her learning journal on a daily basis, JN makes the point that "at the moment I don't see how keeping this journal is relevant to the course work or even to my growth/development" (JN-LJ). She reports that other students "also think that keeping a journal can be tedious and seems unrelated to IS" (JN-LJ). However, in her reflective review at the end of her first portfolio, JN observes that the PDP made her realise that "before doing this portfolio I had not had clearly defined goals. Searching for a job and doing research on it has helped me to do away with the misconception I had had about finding a job in the IS sector ... this has motivated me to continue studying in this field" (JN-RR1).

In his final reflective review, CI indicates that over time he came to value the PDP experience: "At first I felt creating learning plans was a waste of time and having to write in

the learning journal would serve no purpose" but "Overall the experience of pursuing these development goals was a positive one ... it turned out to be a worthwhile exercise" (CI-RR3). While his original goals "were formed by direct influence of what I think my future career would require me to do, but it later turned out to be helpful skills to have in everyday life" (CI-RR3).

Over the period, the students appeared to emerge more and more as engaged, reflective learners, able to reflect on *appropriate issues* linked to the PDP (see Table 3.6).

After working on the PDP for several weeks, CI adds a further goal to his learning plan, "namely self motivation. Self motivation is important for the fact that nobody is standing behind to push me to do what is required of me at this stage in my academic career, and in the work place and future career I want to pursue nobody will" (CI-RR2). He further describes "some goals I viewed as more important and my efforts and motivation towards achieving them were according to that" (CI-RR3).

PU reports some progress with her time management goal in her second portfolio, "I'm more conscious of time and I prioritize the work that I have according to the importance or submission time. I was really delayed in the starting and completion of portfolio 1 which really stressed me; I got started as soon as possible with portfolio2" (LC2). She describes her portfolio 1 experience as her critical learning experience in portfolio 2, and reflects that it "got me thinking of my bad time management and planning ... and lead me to realise I need to have a continuous standard in my work ethic." (RR2). She concludes by saying "the only way I will that I will truly 'develop' is through my own undertakings ... I would have liked to see a dramatic and lasting improvement in my time management and planning goals – *change is a gradual process ... better the little achieved than nothing at all*" (LC2).

When JN finds the going tough across all her courses she reflects on the problems and thinks about solutions. "Today was not a good day, although I got a good mark for my HR debate, I failed my test. I feel so de-motivated right now" (JN-LJ). Two days later and JN is still "feeling so down about this". She reflects "I suppose I should revisit those self-motivation and confidence sites I wrote about earlier" (JN-LJ).

In his third portfolio, KE again identifies lack of time as being the main contributing factor to not doing well in his PDP. "Honestly I didn't have enough time to do some of the portfolios because there were due on the same day as the milestones. I never had enough time to deeply describe them" (KE-RR3). Reflecting further, he states that "I personally don't think I add enough effort to some of my portfolios work meaning some parts were unfinished or not to required standard. Sometimes I skip other parts which were important for my

development but this is a learning curve …next time I will do it much better in a different way (KE-RR3).

UF reflects on his learning from a team conflict experience. "This situation has taught me something that I hope to keep with me for a long time ... I mustn't always expect to impose my views on people. This is especially important in a group situation ... you can all have different views while still pursuing the same goal" (RR2).

Many of the students were very open and *honest* in their writing, and reflected on both *positive and negative* issues (see Table 3.6).

JN commenting on her journal writing says "I am really proud of myself for reflecting my thoughts in this journal, or trying to at least. Reading my past entries I don't always feel that I've 'reflected" as well as the webCT resources suggest I should, but I am quite content with this journal because it allows me to look back at past events, and although I might not have reflected on them, the mere memory of the event allows me to recall what my emotions/feelings were at the time. I can then compare these feeling to how I would react if that situation would arise in the present and by doing so I have an idea of whether I've grown/matured or even learn from past events" (JN-LJ).

CI's discusses mixed success in pursuing his goals: "In the area of time management I am making progress but it is very slow" and "I am having trouble with eliminating self-doubt" (CI-LJ).

In amongst her on-going concerns with passing tests and essays in other courses, PU expresses disappointment in her academic progress: "this year was suppose to go well and it doesn't seem to be ... my fear of public speaking ... one of my development goals ... well lets just say I'm not progressing" (PU-LJ). A short while later however, she describes how "I feel that I've learn't more in the past 4-5 weeks then the whole of last year. Time is important as well as maturity ... I'm taking my studies more seriously this year cause I know the benefit I'll get later" (PU-LJ).

UF describes the difficulties he faced with his team when he wanted to create "a strategy that would be consistently applied in relation to our working together on the course ... would help us to be productive ... would also help us not have to worry about always setting a time for our next meeting ... there were other strategies I was pushing for too" (UF-RR2). These ideas appear to have met with some opposition from the team, "It became clear to me that everyone believed I had my own agenda here. I believe some may have even thought that I am not serious about the course because I already have my majors" (UF-RR2). He explains some of the areas of what he interprets as misunderstanding. "I wanted them to appreciate that we could have the best working relationship if we remained

reasonable about each other's capabilities, availability and expectations. For example, I thought it would be best if we reminded each other about the agenda of next meetings, especially if that member had missed the previous meeting, This was dismissed as my ploy to make sure that I am reminded about my work, when I should keep up with downloading and reading handout" (UF-RR2).

As the PDP progressed, some indications of *planning or links to the future* were also observed, with several students making links to their futures at various points during the PDP (see Table 3.6).

ED, for example, sums up her reflection on the PDP at the end of the first phase as "an opportunity ... to seriously consider the future, and a wakeup call. It felt good to try and create a plan ... to improve myself for the future. (ED-RR1) She also reflected on how, despite not enjoying writing in her journal to begin with, "I found that when I became frustrated with my portfolio piece and started writing about it, it helped me realize what a positive thing the work could be in terms of being able to focus on and plan for the future" (ED-RR1).

UG signs off his journal with "It is with a great sense of accomplishment and pride that I end this journal" and his reflective review with "I have embraced this change and now, I am never looking back!" (UG-LJ), indicating perhaps that he plans to continue with aspects of the PDP into the future.

As Hatton and Smith (1995) reported in their study, the reflective writing about their learning and development engaged in by students ranged from straightforward reporting of events, through reasoned descriptions and dialogue (with themselves around issues that they are grappling with), with some students touching on critical dialogue (which draws on a wider context for explanation or reflection).

Self-direction

Learner autonomy is strongly linked to the idea of SDL, and Chene (1983) describes autonomous learners as *independent* and able to *make choices*.

PU explains how "A tertiary qualification only provides technical knowledge, so to be competitive in my career my aspirations would be [to be] more assertive in my approach, have strong verbal communications, be organized and effectively manage my time" (PU-PF1).

When ED realises that she is not managing to make progress towards a particular goal she is able to make choices about how to proceed. "I have not spent enough time developing this skill as I have found it difficult to set time aside for it, and to motivate myself to keep

doing it, particularly in the last two weeks with the many projects due and tests I have had" (ED -LC2). She decides to rationalise her goals and to continue working on the HTML and defer her third goal to the next semester.

When CI's team find themselves with a project milestone far from complete the day before it was due, CI describes how he moved from anger, fear and helplessness to being able to make choices and decisions and take control: "At the time the episode occurred, I had a feeling of inadequacy in terms of coping ... After I reflected on the situation ... I set a plan into action. ... I developed a sense of empowerment" (RR2). He further demonstrates how he learned from the incident: "For the next milestone and the portfolio 2 deliverables I planned in advance, putting time in place for to space out the coursework I had to do ... helped me to move closer to one of my goals ..." (RR2).

Candy adds to Chene's view above, *strong values and beliefs*, particularly *self-restraint, self-discipline and persistence*, together with a *willingness and ability to undertake one's own education* (1991) (see Table 3.6).

UG acknowledges the constant change in the IT world and the need for "an IS professional to be open and willing to try new forms of technology" and states that although "there will always be aspects of technology that I do not fully understand or skills that I am not particularly good at, the important thing is not to give up and to persevere until you reach your goal" (UG-RR2).

Several students while apparently willing to identify and set goals, worried about their abilities to undertake the PDP, especially at the beginning.

UG shows that while he was able to choose appropriate learning goals, he doubted his ability to successfully undertake them. "My greatest weakness lay in my technical skills such as programming, my mediocre knowledge concerning methodologies and software programs and my lack of time management skills. Once I was able to identify my weaknesses I began to set goals for myself" (UG-RR1). "However, setting those goals was not easy. Although it was I that set them, I still had reservations… My goals were short-term and realistic but I was afraid that I would not be able to fulfil them." (UG-RR1)

PU worries that "I feel that I do have the capability to succeed but not enough sustained motivation to carry it long term" (PU-RR1). She demonstrates good self-awareness in identifying the problem, "One of my difficulties is slacking off when I'm almost close to complete with certain work or with general things" (LC2).

She later describes how "I was eager in starting my goals as I thought it would be achievable within 5 months time ... but I realised how hard the actual undertaking of a goal

is. It's easy to state goals but another in achieving them as there has to be an incentive or lasting motivation for me ... I haven't totally reached it but it is in the process" (RR3).

When outside commitments threaten JN's plans she writes "I plan to keep this to weekends ... I don't want to lose focus off my work because I know that it is difficult for me to catch up. I refuse to compromise my lectures and other school time. It feels good writing this and knowing I mean it, I'm proud of myself right now" (JN-LJ).

Self-monitoring (or learner responsibility for constructing meaning) and self-management in which the learner manages the learning tasks in terms of what and how to learn are also attributes strongly linked to SDL (Garrison, 1997) (see Table 3.6).

UG describes how "I have begun to practice my VB and it shows. I was slightly more confident in class today". A few days later he reported that "I am pleased that my hard work is beginning to pay off"

ED describes her approach to her goal of learning HTML (a web programming language). "I have finished the beginner tutorials and can create a very basic website ... I really enjoyed following the tutorial and building my first webpage ... I have not spent enough time developing this skill as I have found it difficult to set time aside for it, and to motivate myself to keep doing it, particularly in the last two weeks with the many projects due and tests I have had" (LC2). She also reflects that "I can see I have managed my time poorly – this piece is a lot more work intensive than I first realised and I have been so busy worrying about the milestone piece that I have neglected it" (ED-LJ).

ED also realises that failing to stick to aspects of her development plan was going to cause her problems. "I did not keep a record of my thoughts as I intended to either which has presented a difficulty in assessing myself" (ED-LC3).

Brockett and Hiemstra (1991) see taking personal responsibility and ownership for the required behaviours and thinking as being fundamental to self-direction (Table 3.6).

When JN "takes a day off from studying ... because I don't have any lectures today" she promises that she "will work extra hard tomorrow." She reflects that "it feels as if I might be growing as a person. Realising and taking responsibilities for my actions seems to be one of the aspects I am developing" (JN-LJ).

Towards the end of the PDP, JN notes "that weeks passed and I saw myself becoming less concerned with these goals and at that stage I had to remind myself of them" (RR3). She identifies the practical value of her development, "for example, drawing up a calendar with important dates and deliverables on it not only helped me to manage my time by planning

my activities, it also served as a motivational device because it was a constant reminder of pending tasks that encouraged me to keep working" (RR3).

PU reflects back on her previous year of study "[I] wasted my potential not to mention my mother's hard earned money ...", and says that a "huge brain makeover is underway ..." (PU-LJ). She demonstrates self-awareness when she says that "I realised that I'm not the type of person that can balance my academics with my social life ...", and prioritises "my social life doesn't seem that important for now ..." (PU-LJ). She explains that "my failure right at this moment is jst [just] temporary. I know that I am going to work hard and not give up even though at times I may be failing ... In short my failure will not cause my downfall ... I will be motivated to work damn hard" (LJ).

ED views her new situation working with "very competent and outgoing" team members as posing a new challenge: "I worry ... that I will allow someone else to handle everything rather than being involved myself as I am a more reserved person. I intend to ensure that I actively participate even if it makes me feel uncomfortable" (ED-RR1). ED later concludes a reflective review by identifying "significant value" in an incident which showed her "that I must be willing to persevere and overcome difficulties ... The IT and IS environments evolve rapidly and it is essential that I be able to be confident in my own ability to learn continuously if I am to become part of the professional environment" (ED-RR2). She further acknowledges "I think my learning process could have been more assertive, as I was quite passive in achieving progress in this goal ..." (ED-LC3).

KE confesses to spending very little time on PF1,"Honestly I didn't do the portfolio properly because I remember [it] took me 2 hours because I was busy doing the milestone" (KE-LJ). He admits that "I need paid attention to the submission data – the milestone and the portfolio were due on the same day. I honestly didn't have enough time …" (KE-LJ).

As the last stretch of term starts, PU explains that "I've realised that thorough preparation is needed at university as well as having an inquisitive mind and not forgetting motivation and a hard working attitude ... I've decided to study each subject a few hours every day so that it can build up to when i actually write a test or exam instead of stressing ... my attitude readjustment starts from today and will see how it goes!" (PU-LJ).

"My view on the usefulness of doing this portfolio has changed. Now I see this portfolio as a useful tool for working towards self development." CI further acknowledges that "This way of self development only works if the person sets ~~aside~~ goals that he or she would like to achieve" (CI-RR1).

Self-awareness

Students revealed various levels of self-awareness relating to their knowledge and skills, learning styles, level of achievement and progress towards goal, as well as level of effort that they had made.

CI is aware that "In this job I will be working with a development group, but will also be expected to take up a leadership role in a project, which is something I need to work on", and "Discovering my potential and eliminating self doubt and working more on my confidence as a leader should be among my main objectives" (CI-RR1).

PU describes how "I embarked on this short journey of 'self-discovery' ... and I slowly began to realise the possible benefits of such a plan. I came to the conclusion that it's not often that people look internally to evaluate or even reflect on their flaws" (PU-RR3).

KE has developed an awareness of some of his shortcomings and continues to demonstrate growing self-awareness, and finishes off his final submissions by saying "It was challenging, stressful and at the same time motivating because it helps you identify your personality and the soft skills one needs…Next time I would change how I manage my time and try to dedicated or allocate more time in doing this portfolios. Increase the standard to more acceptable one" (KE-RR3).

OL explains that "One of my main weaknesses is writing, that is why I don't enjoy these types of portfolios" (OL-RR1)

ED shows awareness of lack of self-management when she describes disappointment "that i have been so lazy in working towards this goal and realise that I should have appointed a specific time for myself to work on learning HTML ..." (ED-LC3). She also comments that she "ultimately discovered a few things about myself such as that I will need to work on self motivation if I am to achieve any of the goals I set myself ... and that I am definitely capable of teaching myself new things." (ED-RR3)

OL seems to contribute more readily in areas in which he feels comfortable "I always thought I was the laziest and just wanted other people to do my work for me, but instead I did a lot of work…when it came to contributing thoughts and ideas for the written part, I gave the most input" (OL-RR3). He also admits that "I am not the type of person that studies a lot. I mostly try to understand everything during the lectures and I get very lazy when it comes to studying" (OL-RR1), showing good self-awareness of his approach and attitude to learning.

Guglielmino and Guglielmino (2003) further identify "a willingness to seek help" and "valuing your own learning" as important attitudes for success in SDL.

Struggling with certain aspects of programming, ED "was already stressed about the programme we were about to receive as I was behind on my programming and had not completed the previous week's project ... and subsequently spent the entire session trying to debug the small programme with the tutor." (ED-RR2). ED expressed several reactions to this incident, "feeling frustrated and angry", "embarrassed by my incapability" and feeling "inadequate". Later she rationalised that her friends "had a lot more programming experience" and realized that "I would need to give myself more time to learn". She stated however, that "this is something difficult to accept as I am used to being good at my studies and I do not like feeling incompetent or stupid" (ED-RR2). Here ED's reflection takes on a critical dialogic form as she tries to understand and come to terms with a difficulty that is not usual for her. She ends the portfolio saying, "It also made me realize that it is not shameful to ask for help, another quality that will hold me in good stead as I journey towards my future career" (ED-RR2).

UG describes feeling "overwhelmed and confused" by the sheer volume of information available and finds "it difficult to decipher which information is useful and which has become obsolete" (UG-RR2). He therefore updates his planned 'strategy and resources' in his learning contract to include using an expert to help guide him in this area. He also draws on a wider pool of resources and strategies to support his programming and seems to value the outcome; "I will have to read up on it"; "I asked the tutors for help today", "I'm going to ask one of my team members for assistance", "I have asked someone for help ... I have a better understanding of it now and am pleased with the result" (UG-LJ).

5.2.5 Perceived Benefits of Participating in the PDP - Q1(f) and Student Attribution of Source of Benefits – Q1(g)

The majority of the students identified at least one benefit to participating in the PDP, while others identified several. In most cases these only emerged after some period of engagement with the task. Several students also expressed negative views towards the PDP, though most of these students had also identified some benefits.

Most of the benefits identified by the students relating to the PDP were related to jobs or careers, which is to be expected given the focus of the PDP. Increased awareness around career options and the variety of jobs was raised by some students. ED reports that "Once I managed to start researching I was surprised by the number of job types available ... I had always thought if you were not a programmer, you were most probably a systems analyst or did technical support. I did not realise how complex and extensive the field really is (ED-RR1). JN explains how "Searching for a job and doing research on it has helped me to do away with the misconception I had had about finding a job in the IS sector ... this has

motivated me to continue studying in this field" (JN-RR1). The individual research component of the first portfolio resulted in the realisation of the benefit.

A further career related benefit that was identified, was that doing the portfolio encouraged students to think about their own career choices and paths. UF commented that "I think this way of studying is very useful and very relevant to, especially, people with no background in IT. It is good because it gives you a chance to experience various aspects of work in this field. This really helps to investigate the area that will best suit your personality and goals in the industry". JN realises that "before doing this portfolio [she] had not had clearly defined goals" (JN-RR1) and ED confesses that "I have never actually thought carefully about exactly what career I want, beyond being involved in the IS profession. This somewhat shocks me now as I'm not sure how I thought I was going to achieve finding a job without knowing what my options are and what I need to work towards to get there" (ED-RR1). ED further reflects that "Overall I did actually get quite a lot out of this project. I discovered what possible job opportunities I can set my sights on" (ED-RR3). For OL, "The only part of the portfolio I enjoyed was the researching part because I got to know more about the job requirements and the knowledge and skills that are required" (OL-RR1).

Strongly related to identifying possible careers and choosing career paths, was the benefit of actually planning towards their careers. "I did not enjoy writing in the journal to start with ... However, I found that when I became frustrated with my portfolio piece and started writing about it, it helped me realize what a positive thing the work could be in terms of being able to focus on and plan for the future" (ED-RR1). OL reiterates his lack of enjoyment of the PDP, but acknowledges that "even though I didn't like this portfolio and even though this portfolio has been a big headache for me, it has helped in a few ways" (RR1). These include "[making] me aware of what kind of people the companies are looking for", "how far behind I am in terms of knowledge and skills" and "has motivated me to improve on the skills that I lack for this job" (OL-RR1). For KE, a career planning benefit was "identify[ing] objectives (soft skills) that will help me to grow as an individual and survive in the corporate world" (KE-RR3 and LJ). The requirement to analyse and profile the necessary knowledge, skills, values and attributes for particular jobs or roles, resulted in students being aware of both the opportunities for careers, as well as the requirements for pursuing these.

For some students, participation in the PDP helped them realise the need to take responsibility for their career development. "[I] realised how much work I need to do outside the scope of my courses if I am to achieve ..." (ED-RR3). OL too realises the need to take responsibility. "I had thoughts of replacing my goals with some easier ones that I would be able to achieve easily. Although that would help me now in the short term, I still

require those other skills for my career and things will get much easier for me if I start working on them from now" (OL-LC2).

A second major theme that emerged in terms of benefits was that of a developing personal awareness and desire or need for self-development. JN describes "the highs of completing these portfolios are that I gained a greater insight to my feelings and thoughts because reflective writing forced me to explore them further and I learnt how to recognise how a particular event can affect the way I think and can change the way I react to similar events in the future" (JN-RR3). Furthermore, UG identifies "compiling this portfolio and starting a learning journal" as providing the benefits of "set[ting] me on the road to self-discovery" and "arousing in me a sense of self-motivation that was previously unbeknownst to me". (UG-RR1). CI closes his portfolio 1 reflective review with the following: "My view on the usefulness of doing this portfolio has changed. Now I see this portfolio as a useful tool for working towards self development." He further acknowledges that "This way of self development only works if the person sets ~~aside~~ goals that he or she would like to achieve" (UG-RR1). For KE, "Doing a personal development plan helped me to reflect and identify myself" (KE-RR3 and LJ) ..." It was challenging, stressful and at the same time motivating because it helps you identify your personality" (KE-RR3).

This was coupled with a growing awareness of personal strengths and weaknesses.

ED comments that she "ultimately discovered a few things about myself such as that I will need to work on self motivation if I am to achieve any of the goals I set myself ... and that I am definitely capable of teaching myself new things" (ED-RR3). JN describes how "I embarked on this short journey of 'self-discovery' ... and I slowly began to realise the possible benefits of such a plan. I came to the conclusion that it's not often that people look internally to evaluate or even reflect on their flaws" (JN-RR3). ED reveals how "I originally thought I was reasonably good at this [time management] but I have found that I have felt rushed and stressed this entire block in terms of finishing projects and studying for tests" (ED-LC2). UG realises that "I had made a great personal discovery during this time ... it came as quite a surprise to discover that good communicational skills are invaluable to a team leader. ... I am determined to further develop these skills" (UG-RR2). CI has learnt "that I am a good leader and that I have certain skills that I never even thought of, such as conflict management skills" (CI-RR3).

For some students, there was a sense of pride in achieving some meaningful goals.

In his final reflective review, CI indicates that over time he came to value the PDP experience: "At first I felt creating learning plans was a waste of time and having to write in the learning journal would serve no purpose" but "Overall the experience of pursuing these

development goals was a positive one ... it turned out to be a worthwhile exercise". He further describes "some goals I viewed as more important and my efforts and motivation towards achieving them were according to that" (CI-RR3). He identifies that his original goals "were formed by direct influence of what I think my future career would require me to do, but it later turned out to be helpful skills to have in everyday life" (CI-RR3).

PU describes how "I was eager in starting my goals as I thought it would be achievable within 5 months time ... but I realised how hard the actual undertaking of a goal is. It's easy to state goals but another in achieving them as there has to be an incentive or lasting motivation for me ... I haven't totally reached it but it is in the process" (RR3). ED ends her final reflective review by saying that "although I did not give myself all the opportunities to grow during this project that I should have, I did progress towards my goals and I am proud of what I have achieved" (ED-RR3).

A third and very important theme that emerged as a benefit for some participants, was an awareness of need for on-going learning. For ED "... the field is not really about how much you know. With rapidly advancing technology and languages and tools being constantly invented, it is rather about how much you are prepared to learn and whether you will be self motivated enough to teach yourself indicates in his writing that although he has made little effort and achieved little progress, that he has learned something from the PDP experience. "I always thought to myself, 'be positive and everything will work out fine'. The portfolios and the milestones taught me something different in a way that sometimes you have to sacrifice everything even your social life if your want to survive" (RR3 and LJ). CI makes tremendous progress in realising that despite not achieving a particular goal, "this was not a major upset because I can still continue to pursue this goal" (CI-RR3) in the future. He notes in his discussion on LC3 that "I consider this goal as unachieved and plan to continually work on it until I perfect it, maybe even changing the title of the goal" (CI-LC3). This shows a very different side of CI from the one who was very quick and eager to claim achievement of goals earlier on. In the end PU even starts to bend a little "in doing the different portfolios ... I realised it was necessary" (PU-RR3).

5.3 Exploring the Possible Contribution of Change Management towards Mediating the Change to Self-Directed Learning

In this section an exploratory view is taken in identifying the problems or challenges caused by the change in pedagogic approach when introducing SDL, and identifying possible ways in which to mediate this change using change management principles and approaches. Once again relevant aspects of the literature are brought into the discussion of each

research sub-question, together with evidence drawn from student work and reflective writing.

5.3.1 Student Concerns and Fears Experienced when Encountering SDL Initially and as they Progressed through the PDP – Q2(a).

A variety of concerns or fears were articulated by students relating to the PDP, both initially and as time passed.

For some students, the unknown was troubling. JN describes feeling "sceptical" about "the concepts of a development plan, reflective writing and learning journal ... and was not sure what to expect" (RR3), while for UG "The excitement that I had felt [about the new academic year] was quickly fading away, only to be replaced with anxiety and uncertainty" (UG-RR1).

Long (1994, p 13) acknowledges that the introduction of SDL constitutes change and identifies "fear of the unknown" and "reasonable satisfaction with the status quo" as potential sources of resistance. Carnall (2003) sees resistance due to uncertainty as lack of readiness for change.

Several students expressed concern over the relevance (or lack thereof) of the PDP and felt that it would simply add to their workload. "At first I thought this was just a run of the mill research piece that would serve no meaning ... I was even annoyed to discover what comprehensive research was required ..." (ED-RR1). JN in looking back explains how "My view was that these portfolios would only entail extra work that would bear no significance or have any impact on our coursework and syllabus" (JN-RR3). She goes on to quote an early entry that reflects this, "at the moment I don't see how keeping this journal is relevant to the course work or even to my growth/development" (JN, LJ-RR3). UG "had the preconceived idea" that it would be "unhelpful, boring and a waste of time" (UG-RR1). Many of the students experienced a change of heart over the period, "My view on the usefulness of doing this portfolio has changed. Now I see this portfolio as a useful tool for working towards self development" (CI-RR1).

For Trader-Leigh (2002) self-interest is an important factor contributing to resistance to change, and Armenakis et al (1993) identify personal valence and discrepancy (is this change really necessary?) as important components in their change message strategy.

ED comments on one of her concerns relating to her chosen goals, worrying that "I will become lazy about doing them, particularly during stressful weeks in university" (ED-RR1). Similarly, PU explains "I feel that I do have the capability to succeed but not enough sustained motivation to carry it long term" (RR1). "One of my difficulties is slacking off

when I'm almost close to complete with certain work or with general things" (PU-LC2). This theme continues throughout the PDP for PU as she later comments that "It's easy to state goals but another in achieving them as there has to be an incentive or lasting motivation for me ... I haven't totally reached it but it is in the process" (PU-RR3).

Lack of initial motivation to embark on SDL (Knowles, 1975 and Garrison, 1997) and sustained motivation to complete goals and tasks (Garrison, 1997) is a threat to student success in SDL undertakings.

For several participants, the issue that concerned them was time**.** "Although this portfolio has been a little helpful I still think that it wasted a lot of time ..." (OL-RR1). "... and completing these portfolios would take me a considerable amount of time" (JN-RR3). "I had lots of fun working on my developmental goals, but hated having to take out time to document them for submission" (UF-RR3). "I found it unnecessary and a waste of time as there were many other things I needed to do" (PU-RR1). Even diligent students like ED had time related concerns, "I also worry that I will simply not have enough time to complete them on top of study and working part time" (ED-RR1).

Another major concern of the PDP for students was reflective writing, with the learning journal requirement causing particular unhappiness: "I was filled with a sense of dread at having to keep a journal" (UG-LJ).

Virtually every participant went through some period in which they commented on their dislike or difficulty with the journals or reflective writing. PU describes reflective writing as "such a pain, I thought of it as a good way of self discovery but its really lame and boring especially when you writing your thoughts down for marks!!" (PU-LJ).

ED "did not enjoy writing in the journal to start with ..." (ED-RR1) and OL is very definite in his dislike towards the learning journal. "Regarding the journal, I have never kept one before so it was weird, I didn't write that much in it and I think this is the only year I will be writing in a journal because I am not planning to keep a journal again, unless it's absolutely necessary" (OL-RR1).

JN writes diligently and prolifically in her journal from the start, but comments that "at the moment I don't see how keeping this journal is relevant to the course work or even to my growth/development" (JN-LJ). She discusses this feeling with other students and reports that "they also think that keeping a journal can be tedious and seems unrelated to IS" (JN-LJ). Later she describes how "I'm not really good at expressing my thoughts or emotions. This diary is also becoming quite a chore" (JN-LJ), while continuing to write daily entries. A short while later however she describes how "I am really proud of myself for reflecting my thoughts in this journal, or trying to at least" (JN-LJ).

UF also writes that "I have started writing on my journal and it seems to be working well for me" (UF-RR1) but it never materialises as part of his submission. UG "had the preconceived idea" that it would be "unhelpful, boring and a waste of time" (UG -RR1), but wrote prolifically throughout the entire PDP period, expressing later that "surprisingly enough, this journal has begun to grow on me…I find it helpful as it has become a means to record all my emotions and thoughts" (UG-LJ).

5.3.2 Aspects of the PDP that the Students Found Difficult or Challenging – Q2(b)

Various aspects of the PDP presented challenges to the students. Some of these aspects were noticed and commented on by the students, while others emerged more in the work that the students produced.

Reflection and reflective writing as demonstrated earlier proved to be both difficult and unpopular with the majority of students, particularly at first. Interestingly JN, one of the most prolific and consistent writers across the period of the PDP describes the "downside of the portfolios was that I found it challenging to reflect on my thoughts ... it was necessary to think deeply ..." (JN-RR3).

PU, too, an expressive and prolific writer who rates her level of journaling as only partial, expresses her view of reflective writing as follows: "Gosh! Gosh! I'm really panicking now, I'm not entirely done with portfolio 2 and its due this Friday ...! Reflective writing is such a pain, I thought of it as a good way of self discovery but its really lame and boring especially when you writing your thoughts down for marks!!" (PU-LJ).

As she appeared to be experiencing significant time pressures both then and at several other points in the process, her attitude may well have been influenced by the other major challenges identified by most students which was managing time, especially in prioritising and balancing the workload across IS and their other subjects. As PU put it, "I found it unnecessary and a waste of time as there were many other things I needed to do" (PU-RR1).

The other major challenge that emerged from the PDP was not emphasised as much by the students in their reflective writing as evident in what they did. While many students managed to identify appropriate goals in relation to their possible future career, interests and weaknesses, few if any students were able to fully define the detail relating to learning resources and strategies, or validation and evidence of learning.

Students drew on very limited resources and approached their learning in an ad hoc and unplanned way. Reading articles on the internet found using Google was a firm favourite,

with little indication of the type of article they would look for or how they planned to use the information.

They also displayed very little understanding of the type of activities or products they could use to demonstrate learning and progress, with many of them confusing evidence with strategies. A good example of this confusion can be seen in OL's identification of his evidence for public speaking as "I will speak on behalf of my team when necessary" instead of using this as a development strategy for improving his public speaking (OL-LC).

Furthermore, virtually none of the students specified any type of measurement or criteria against which their goals could be measured.

In general, the skills relating most to students current felt needs, such as time management, teamwork and leadership, appeared to be those that they managed to work with most successfully. Time management in particular was well engaged with, and students seemed most able to identify resources and strategies to use, and furthermore to monitor and adjust their approaches depending on the levels of success they achieved. The instant feedback and day to day usefulness of this goal made active engagement and reflection accessible to most of the students.

5.3.3 Student Reactions to the Change Relating to the Introduction of the Unfamiliar SDL Approach - Q2(c)

Student reactions to the change brought on by the SDL aspect of the PDP were not dissimilar to those usually associated with change.

Many students expressed resistance right from the start, either to the PDP or to aspects of it, particularly to the learning journal as seen earlier. As is often seen in corporate situations, the resistance took many forms such as complaints expressed in their journal writing or reflective reviews, non-participation in particular aspects of the PDP, like writing little or nothing by way of journal entries, or not submitting parts of the portfolio work. Unlike corporate change initiatives, however, no-one tried to sabotage the PDP, though there was evidence of the "corridor speak" that often characterises and undermines corporate change initiatives.

There were also the typical early adopters, the followers who waited to see what happened but complied in time to meet deadlines, and one or two stragglers bringing up the rear. As the project progressed, other typical reactions emerged. Students would move between being supportive of the change, seeing benefits and participating enthusiastically, to complaining about the PDP and blaming their difficulties on team-members, time problems, family and workloads. Most students experienced both excitement and disillusionment with

the PDP and SDL along the way, depending on how their overall environment and academic achievement were experienced at the time.

Overall though, like many change initiatives, most students seemed to comply with the change, some buying into the idea more than others, and a few embracing the change longer term.

5.3.4 Aspects of PDP Process or Structure that Supported Student Progression and Successful Completion – Q2(d)

Despite the need for many changes to the PDP to facilitate easier student engagement and more predictable success, certain aspects of the PDP did support the students in SDL engagement.

The structured approach to the formulating of goals in a context in which students could recognise needs and evaluate their strengths and weaknesses helped to both avoid the "paradox or tyranny of choice" (Brockett, 2006; Schwartz, 2000) while at the same time focusing students on an area not entirely outside their realm of knowledge and experience.

The context is also relevant to the students, all of whom are pursuing a major in IS and who will therefore need many of the skills identified as goals. Furthermore, the relevance of the goals should serve as some level of motivation for the students, despite the objections voiced in their reflective writing at times. Most students at one point or another also voiced their support of the PDP and claimed or demonstrated benefits from participating.

A further controversial claim might be that the learning journal and reflective writing pieces supported student progression and success. As shown earlier many students did not enjoy reflective writing at all, and even those who did write prolifically and well, had times during which they complained about the requirement.

However, students did seem to develop a strong level of reflection relating to the learning, not just for their PDP goals but also to their overall learning across the IS course and other courses they were doing. Instead of merely identifying problems, students seemed to actively engage with both their difficulties and successes, and not only write about these, but also how they felt, why they thought these were happening and what further plans or actions they proposed taking. Instead of the usual passive reactions, a more involved, proactive and thought out path was adopted by many students across their academic work as seen earlier.

The use of a structured learning contract that required students to reflect on progress and difficulties thus far, and make changes and adjustments along the way, supported students' engagement with their learning goals and helped motivate them to keep on track and make

gradual progress. Furthermore, despite the formulation of goals and strategies being the weakest aspect of the PDP for most students, without that structure and requirement, very little development towards goals would have taken place. The requirement to reflect on specific questions as well as undertake a critical incident report relating to one of their goals, also provided structure and focus to their thinking and work.

Finally, the requirement to develop a portfolio of evidence demonstrating what they had done, the resources they had used, and evidence to support their claims of learning and progress, forced students to think about how they would not only go about their learning and development, but how they could present their successes in a meaningful way.

5.3.5 Aspects of Student Difficulty that could Potentially be Limited by Implementing Change Management Principles – Q2(e)

As a major contributing problem affecting students is that of change readiness, change management principles establishing readiness through strong leadership should be the first aspect to consider.

Grow's SSDL model for stage 2 SDL learners requires the dominant teaching role to be that of motivator and guide, with the stage 1 role of coach and authority and stage 3 role of facilitator also coming in to play. This implies that the most useful leadership behaviour to adopt when leading change in this situation appears to be that of *framing change* in which the leader creates a framework for contribution to and participation in the change. This involves a high level of trust in the participants, as well as creating and selling the vision, direction and need for change (Higgs & Rowland, 2010). The *capacity creating* leadership approach which focuses on developing people's skills relating to change, providing feedback on progress, and providing coaching for improvement (Higgs & Rowland, 2010) might also prove useful in supporting the stage 1 SSDL type leadership role.

Armenakis et al (1993, p682) suggest that "framing a project in terms of readiness seems more congruent with the image of proactive managers who play the roles of coaches and champions of change". Crafting a change message that conveys the five message components of discrepancy, efficacy, appropriateness, principal support and personal valence via the message conveying strategies of persuasive communication, active participation and managing information ties in with the framing approach to change leadership of Higgs and Rowland (2010), and would allow for a focused and complete communication to be put across to students prior to and during the SDL experience.

The messages can convey much of what is said or implied already in the course notes, PDP requirements, etc., but carefully crafted and intentionally delivered could provide a more powerful and compelling message. They do however caution that this strategy relies on the

expertise, trustworthiness, credibility and sincerity of the change agent (Armenakis et al, 1993) further supporting Duck's view on developing trust between change leaders and participants (1993). Acknowledgement of Strebel's (1996) concept of a personal compact, and the changes being made to it, could also form part of the change message. Motivation relating to the usefulness and value of SDL and the PDP could be enhanced by incorporating the different message strategies identified by Armenakis et al (1993).

A secondary move to support students in embarking on the early aspects of the PDP, especially relating to goal setting and definition could be the shift towards a more collaborative engagement with the change. Using workshops to go beyond just the establishment of readiness for change, collaborative explorations of careers, job profiles and skills could support those students finding this aspect difficult. Furthermore, using brainstorming and team support, ideas for learning resources and strategies could more easily be generated, allowing students a starting point from which to work and build towards their own specific learning plans. Discussions around validation and evidence of learning could also help students to understand assessment and evaluation and the use of criteria in judging achievement.

While embracing the collaborative approach to SDL, a focus on each individual student as someone who has to make a mind-shift in order to join the change initiative is also important. The ADKAR model (Hiatt, 2006), discussed in chapter 2, focuses specifically on the individual as a part of a change initiative, looking to develop their Awareness, Desire, Knowledge and Ability, in order to be able to partake in and ultimately Reinforce the required change and behaviours. The theory behind ADKAR is to provide a framework for change at an individual level, as "it is people who change not organisations" and "successful change occurs when individual change matches the stages of organisational change" (Hiatt, 2006).

5.3.6 Aspects of Structure or Process in the PDP that could Benefit from the Application of Change Management Principles or Techniques – Q2(f)

The 2nd year course currently starts off with an introductory lecture in which all aspects of the course are explained. This introductory talk explains the overall focus of the course (systems analysis, design and implementation) and positions it in relationship to previous courses as well as future courses at higher levels. The interactive nature of the workshop based teaching is introduced, together with the idea of the course long team-based systems development project which is used as both a teaching and assessment vehicle. At this point students are also told about the SDL aspect of the project and how it relates to the roles that they will play in the project and in their future careers.

This means that in the past, readiness for change was assumed to be possible by communicating the need or discrepancy using persuasive argument (By, 2007) and suggesting an urgency for change (Kotter, 1995; Kanter 1992). No opportunity was given for active participation (By, 2007) in discovering the discrepancy by analysing the situation and the need for change (Kanter, 1992).

Thereafter the change message as put forward by the lecturer suggested that efficiency, appropriateness and support should all be taken as agreed and necessary (By, 2007) and the assumption was that the students would simply buy in to the shared vision (Kotter, 1995; Kanter 1992) and develop the necessary skills and confidence to tackle the SDL task. Furthermore it was assumed that in completing the PDP students would come to realize the personal valence in the task (By, 2007) and be able to consolidate and produce more change in the future as it became part of their internalized approach to learning (Kotter, 1995; Kanter 1992).

The challenge therefore is to develop a comprehensive plan through which to communicate the five components of the change message, using a mix of the three strategies of persuasive communication, active participation and managing information in order to create a climate of readiness for change (By, 2007; Armenakis et al, 1993). A possible strategy would involve embarking on the early aspects of the course which involve examining the context of systems development and the roles which IS professionals play in the process.

A guided active learning session in which project teams analyse the knowledge, skills and values required by the various members of a typical project development team (business analysts, systems analysts, project managers and technical specialists) using real recruitment advertisements would allow students to identify many of the required skills, knowledge and values for themselves. Team or class discussions could then explore how IS professionals might go about acquiring these skills and could help to develop a sense of the discrepancy. Using outside consultants or powerful videos (the third message conveying strategy) early on in the course (instead of towards the end as is currently the case) to discuss IS careers and career development, could help towards meeting some of the initial steps in Kotter and Kanter's models including:

- Realizing and analysing the need for change (Kanter: step 1)
- Creating a shared vision of what is needed (Kanter: step 2; Kotter step 3)
- Establishing a Sense of Urgency(Kotter step 1; Kanter step 4)

Thereafter, the PDP can be introduced and put forward as a means by which to "Empower" the students to "Act on the Vision" (Kotter's 5th step). At this point, the 5th aspect of the change message (By, 2007), personal valence, should have been conveyed and accepted by the students.

Using work teams with students who share similar development goals, implementation plans can be crafted (Kanter's 7th step) and enabling structures (Kanter's 8th step) of peer and lecturer support put in place. This should help to communicate the efficiency, appropriateness and support aspects of the change message (By, 2007) using active participation as the strategy rather than simply persuasive communication.

Providing supportive feedback through early formative assessment of the PDP can be used to "Create Short Term Wins" (Kotter – step 6) and will also go some way towards ensuring that Kanter's 9th step "Communicate, involve people, and be honest" is fulfilled. Thereafter, the completion of a Critical Incident Report as part of the 2nd submission should assist students in "Consolidating Improvements and Producing Still More Change" (Kotter – step 7) as they are led through a reflective process that helps them to identify and recognise progress towards their goals.

On-going reflective writing and the chance to demonstrate evidence of their progress towards their initial learning goals in their final submission, together with supportive feedback from the lecturer should help to demonstrate their ability to conduct SDL initiatives and to consolidate a sense of ownership in their career development. With a heightened awareness of how the various aspects of their degree and formal learning are structured to meet industry requirements as discovered through their PDP, a deeper and more personal commitment to their further development should also be evident.

Using the above more considered and structured approach to the SDL experience, drawing on concrete leadership and management of change guidelines will hopefully result in an earlier uptake of the SDL experience by students and an overall more satisfactory and sustainable result. However, as Potgieter and Bruce-Ferguson (2003) suggest, managing change in an educational environment should also include a strong element of action research allowing for an on-going refinement of the approach.

5.4 Conclusion

In this chapter I presented a cross-narrative analysis of the sample students' SDL experience, evaluating the opportunity provided for developing both an awareness of SDL, and the relevant skills and attributes needed for successful SDL. An exploration of the possible impact of change management principles on mediating the change introduced into the educational environment by SDL was also undertaken.

In the final chapter of this report, I briefly summarise and conclude the findings of this study, and reflect on the methodology and approach taken. I further discuss possible

extensions and additions to this research, as well as highlight other interesting findings that emerged during this project.

Chapter 6: Reflection, Discussion and Conclusion

In this chapter I begin by reflecting on the nature of qualitative research as experienced in this project. In particular I describe how I experienced the approach as iterative and emergent as the study evolved.

Thereafter I draw together the analysis, findings and discussions relating to the two main research questions guiding this research project. In doing so, I also identify the contribution made by this study and comment on its limitations.

In keeping with Rule and John's (2011) suggestion that a case study is never finally complete, I then explore the new ideas and avenues for research opened up by engaging in this research project. In particular I identify additional angles and perspectives from which to study the case and its guiding questions, and put forward a proposal for additional research that examines the result of the changes to the PDP brought about through this research project.

In this way I hope to draw the case study together sufficiently to obtain some meaningful findings, before reopening it in search of more interesting facets guided by what I have learnt thus far.

6.1 Reflecting on the Nature of Qualitative Research and my Research Journey

I experienced qualitative research as something of a self-directed learning journey in which I started out along a fairly well-worn path which I was sure would lead me safely towards my goal. I discovered fairly soon that if I stuck to the well-trodden and carefully signposted paths I could confidently expect to arrive at my destination and see all the predictable sights along the way. If, however, I truly wanted to enjoy the journey in and of itself, and also wanted to experience the joys of exploring less travelled paths and finding unexpected treasures along the way, then I needed to set out to explore the terrain armed with some guidebooks and not as part of a tour group.

My research approach therefore, while carefully considered and documented in some detail, emerged over time with guidance from my supervisor and various authors who I was introduced to or discovered along the way. My approach to analysing the data for example, emerged over a period of time. Having started out wading through hundreds of pages of

reflective writing and portfolio work, it was only on discovery of three PhD reports that dealt with various aspects of people's lives through narratives that I found the story map tool that gave direction and structure to my reading and analysis. Using repeated reading both of the data and the emerging story maps, I slowly not only unearthed the students' stories, but also began to hear their individual voices.

Finding Watt's (2007) work on reflexivity as a researcher also contributed hugely to the narratives. As I read and analysed, I wrote too, and in doing this started to see the data from different perspectives. Often one story would trigger a thought or reflection for my journal, which when read later, would send me back to the data where I would often unearth something important that I had left behind earlier.

Once I had worked through the story map of a student a couple of times, I would mentally construct and narrate the story, which would often highlight holes or gaps in the story which needed filling. Sometimes the story map held enough detail to complete my mental map, but on other occasions I would go back to the data again. This approach emerged in particular to cope with stories where the data was light and little existed in terms of reflective writing. Here of course the danger was reading things into the data, so I relied on using verbatim quotes as far as possible in my analysis.

A last aspect of this reflection relates to the role of participant researcher, and how difficult it is to remain objective in telling student stories. I noticed from my reflective writing how caught up in student successes one becomes, and as one becomes more familiar with their stories, one becomes more invested in and proud of all their achievements, no matter how inconsequential these might seem to an outsider. Reflexivity in research therefore becomes of paramount importance in guiding and checking the analysis of data and interpretation of findings.

6.2 Summarising and Discussing the Research Findings

I adopted a case study approach in this research to evaluate an SDL experience in terms of the opportunity it provided students to develop the required skills and attributes of successful SDL as well as raise an awareness of the growing necessity of SDL for graduate's future careers. As shown in both chapters 4 and 5, my findings were mixed in terms of both the opportunity provided, and the willingness and ability of students to act on these and realize the benefits. While the PDP did provide the opportunity for students to undertake SDL and many students identified benefits in undertaking the PDP itself, few students realized the underlying goal of SDL. Students also showed mixed results in both their success in realizing their development goals, as well as the development of required SDL skills and attributes.

The second aspect of the study was explorative in nature and I looked to using change management principles to help mediate and relieve the impact of change on the learning environment. I drew on models looking at both change readiness and change management, and focusing on both the individual and group experience of change.

Based on my findings I proposed making several amendments to the design of the PDP to support the required development and learning. These amendments were identified using both Grow's Iterative Staged Self-directed Learning model, as well as changes suggested by change management models. I identified the strong use of change messages to create readiness for change, using collaborative approaches to more challenging aspects of SDL, and creating a strong structure to manage and move the change forward from compliance to acceptance, as useful in reconceptualising and redesigning the PDP.

The results of this study therefore contribute to a greater understanding of some of the difficulties and challenges attendant to implementing SDL in formal educational programs, especially in undergraduate study. The study also reveals the benefits of encouraging students to develop particularly as reflective and engaged learners, with some level of self-determination and responsibility.

While this study was undertaken as an intrinsic case study, so that one cannot expect to generalise from it, I have endeavoured to provide the reader with a sense of some of the richness of the data and findings in order that they might find within the study ideas and questions that resonate with their interests and experiences (Rule and John, 2011).

6.3 Beyond the Study: Avenues for Extended and Further Research

As Rule and John (2011) suggest, in summarizing and concluding a study one should also be identifying avenues for ongoing and extended research, both those related to better understanding the present study as well as potential new areas of exploration suggested or opened up by the current study.

The first and most obvious extension of this project is an action research based study to examine the results of the changes suggested by this current study as being implemented in the 2012 cohort's version of the PDP. A stronger readiness focus has been adopted and resulted in changes to the initial launch of the PDP as an SDL experience. The use of readiness messages conveyed in different ways by different people has resulted, for example, in the sourcing of a powerful video that demonstrates the rate of change of technology and its impact on education and today's students. Vibrant, dramatic and hard hitting, the video conveys a sense of urgency difficult to portray with mere words to today's utilitarian students. Other changes that have been made include a collaborative workshop

in which IS roles and careers are explored, and a collaborative and interactive approach to identifying and defining development goals and supporting strategies, resources, evidence and validation. It therefore makes sense to use the current study as a baseline against which to examine the changes to the PDP and any resultant effects on student experience and learning.

Areas for ongoing or extended research that are of immediate interest to me include examining the PDP from the perspectives of motivation both for embarking on SDL learning and sustaining this effort (Garrison, 1997; Knowles, 1984; and others including Bandura and Deci and Ryan) as well as student efficacy. Another area of further study involves the concept of emergent professional identities and how these can be nurtured and encouraged through learning interventions such as the PDP and SDL.

Without digging too deeply or looking too far beyond the immediate questions being explored in this study, many interesting facets of student experiences and student learning emerged from the rich data, especially from their reflective writing pieces and their learning journals.

What was very humbling for me was the realization of how much lies beneath the surface of student work. Without the texture and depth provided by student reflective writing and their learning journals in particular, much of their work, and its attendant success or failure, is one dimensional and does little to convey what they are actually doing, learning or achieving. As learning journals are only submitted right at the end of the process, much of the actual learning and growth may go unnoticed along the way, as students do not always seem to recognize the learning as was seen in this research.

I noticed for example that over the period of time of the PDP, many students found and adopted new tools, approaches and techniques to support them. These included the revision of goals and strategies, time management techniques and detailed planning. In my past experience, undergraduate students often experience issues similar to those encountered by the students in this study, but seem either unaware, unwilling or unable to reflect on and take action towards solving these. While we might stress the importance of using these tools, in this instance self-discovery appears to have made the tools more relevant and valuable to students.

The growing level of self-awareness that emerged through their self-analysis and reflection also painted very interesting portraits of student identities in flux. They revealed their hopes and fears, anxieties and stresses, self-doubt and growing confidences, in wonderfully candid ways. While some students did adopt the more typical victim response that often accompanies difficulty or failure, what was remarkable was the way in which students

identified their weaknesses or shortcomings and took responsibility for these and their actions. Many students over the period confessed to wasting time, procrastination or poor planning, and then often followed this up with actions that resulted in the adoption of the tools identified earlier.

Another area in which students did much writing and thinking was around leadership and teamwork, an area I hope to explore in far more detail. Their honest portrayal of feelings of responsibility and accountability, together with the challenges, fears and hopes they revealed, promises a fertile study ground.

6.4 Conclusion

The nature of the research approach and the rich data set allowed further areas of possible discovery to emerge, both from a research methodology perspective as well as relating to aspects of student learning and development. As Marcel Proust says, "The real voyage of discovery consists not in seeking new landscapes, but in having new eyes" and I believe there is still much in this research landscape that remains to be discovered through new eyes or different lenses.

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APPENDIX A: QUANTITATIVE DATA SET

The following data set is contained in this appendix:

Table	Data Set	Brief Description
A.1	**Self-reported student data on undertaking PDP requirements**	This data looks at student feelings towards the PDP and its related activities. It reports on the same questions over the course of the 3 portfolio pieces. See PF1qa, PF2qa, PF3qa in appendix B.

TABLE A.1 SELF-REPORTED STUDENT DATA ON UNDERTAKING PDP REQUIREMENTS

Group	Student			Portfolio Requirements				Learning Journal			
		PF No	Mark %	Challenging	Stressful	Motivating	Personal Awareness	Difficult	Challenging	Stressful	Enjoyable
Top	ED	1	82	A	SA	A	A	N	N	N	N
		2	95	-	-	-	-	-	-	-	-
		3	83	N	A	N	A	A	A	A	D
	OL	1	75	N	A	N	A	A	A	A	D
		2	70	N	A	N	N	N	N	A	D
		3	60	-	-	-	-	-	-	-	-
Upper Middle	JN	1	69	N	A	SA	A	N	A	N	A
		2	88	D	D	A	A	A	A	A	N
		3	90	A	A	N	A	A	A	A	N
	UF	1		N	N	A	N	A	A	D	N
		2	63	N	N	A	N	-	-	-	-
		3	48	-	-	-	-	-	-	-	-
Lower Middle	UG	1	88	N	A	SA	SA	D	SD	D	A
		2	85	A	D	SA	A	N	D	N	SA
		3	81	N	SA	SA	SA	N	A	D	A
	CI	1	57	A	SA	A	SA	A	A	D	N
		2	75	N	N	A	SA	A	A	N	D
		3	67	N	SA	SA	SA	SA	A	N	N
	KE	1	38	SA	N	A	D	SA	A	SA	N
		2	60	N	A	SA	D	SA	A	A	D
		3	43	SA	N	N	A	SA	A	A	SA
Bottom	PU	1	75	-	-	-	-	-	-	-	-
		2	83	D	SA	D	A	D	N	D	SD
		3	76	-	-	-	-	-	-	-	-

KEY	
SA	Strongly Agree
A	Agree
N	Neural
D	Disagree
SD	Strongly Disagree

APPENDIX B: PDP DOCUMENTS

The following documents relating to the PDP are contained in this appendix:

Document Title	Brief Description	Code Used
Portfolio 1 Requirements	These documents contain information and instructions to students for their PDP tasks and submissions.	PF1r
Portfolio 2 Requirements		PF2r
Portfolio 3 Requirements		PF3r
Learning Contract Template	This is an example of a learning contract. It shows the students the required elements, giving some examples.	LCtmp
Portfolio 3 Updates and Feedback from PF 1 and 2	Updates and Feedback from PF1 and PF2	PF1&2uf
Portfolio 1 Feedback & Assessment	These documents comprise the rubrics used to assess student submissions for the PDP and to provide feedback on their attempts.	PF1f
Portfolio 2 Feedback & Assessment		PF2f
Portfolio 3 Feedback & Assessment		PF3f
Portfolio 1 Quality Assurance	These documents require students to check the quality and completeness of their submissions as well as report on their feelings related to aspects of the PDP.	PF1qa
Portfolio 2 Quality Assurance		PF2qa
Portfolio 3 Quality Assurance		PF3qa

PORTFOLIO 1 REQUIREMENTS – PF1R

Portfolio
1



IS IIA PROJECT

DEVELOPING A PROFESSIONAL IDENTITY

Submission Details

Due Date: Monday, 15th February 2009 by 12:00 noon
Place: Information Systems II Mailbox
Outside Department Secretary's Office – CLM First Floor
Note: Deliverables are to be professionally presented and must contain the completed and signed quality assurance checklist as the last page of your document.

Focus

As you begin your 2nd year of IS study, you go beyond a general understanding of the discipline and start to explore the world of work of IS professionals, and work towards developing the knowledge, skills, attitudes and attributes needed for success in IS careers.

As you will begin to see, there are a multitude of different roles, careers and working environments in which IS professionals work, and over time you can expect to move within these and require new knowledge, skills etc. in order to succeed.

Our focus in the Portfolio of this project is to allow you to focus on your emerging **IS Professional Identity** – to think about **your** particular career aspirations and to focus on developing yourself towards these goals. I hope that you will find this a rewarding and enlightening experience.

Portfolio Requirements and Deliverables

1. Ideal Job Profile

Choose a dream job in the IS or IS related field that you would like to be able to apply for in the not too distant future. Look at the advertised requirements and do some research on similar types of roles or jobs. Now draw up a profile of the type of person that would be "perfect" for the job. Include the knowledge, skills, experience, attributes, interests, attitudes, etc. that such a person would ideally possess.

2. Personal Analysis

Using your understanding of your current strengths and weaknesses, compare your current level of "qualification" for your dream job when compared to the profile developed in 1 above. Obviously you are not yet qualified for your job –

you're only just beginning 2nd year … and hopefully you have aspirations beyond your current levels!

Do a SWOT analysis that helps you to position yourself against the required criteria as identified in your chosen dream job or role, and shows you where your strengths lie, which weaknesses you need to work on, what opportunities this course and project present for personal growth and development, and what threats to try to avoid.

3. Personal Development Plan

Using 1 and 2 above create **your own development plan** for the first half of this year that focuses on **two or three** aspects of the knowledge, skills, values, etc. that you need to acquire or develop during the next couple of years leading up to landing your dream job. Use the guidelines on Ignite to help you draw up this learning plan.

Try to be realistic when drawing up your goals – keep them focused, manageable, and achievable in a relatively short space of time. The idea is to work towards a sense of development, growth and achievement – not to feel swamped and defeated, but at the same time try to stretch yourself a little. You do not need to reach the final point for a goal, but should show some progress towards it.

4. Reflective Review

In this section I would like you to think about what your goals and aspirations are, and to reflect on this self-directed process of moving towards these.

Try to write in your learning journal each day – a mix of reporting what you did or anything significant that happened, as well as some reflective writing on these events. How did they support your development or learning (or hinder it)? What did you learn? How do you feel?

Now use your journal to write a summarized reflection of how you feel about this portfolio and the opportunity to direct some of your own growth and development. You should reflect/comment on your chosen areas of development and how you plan to work towards your goals. Use ideas and quotes from your journal in your writing.

Assessment

Marks for the portfolio will be awarded based on the **level of effort** and the **degree of depth of insight** that you show. You need to go beyond reporting to description and insight… Use the reflective writing resource links off webCT to guide you.

Each of you will have a unique set of goals and aspirations, and will be focusing on developing different aspects of yourself. There is no right or wrong goal or development approach – it simply needs to suit you and your unique development needs.

Please refer to the attached assessment guidelines for details on what I am looking for in this piece of work.

Good luck and enjoy!

PORTFOLIO 2 REQUIREMENTS – PF2R

Portfolio
2



IS IIA PROJECT

DEVELOPING A PROFESSIONAL IDENTITY

Submission Details

Due Date : Friday, 12th March 2010 by 12:00 noon

Place : Information Systems II Mailbox
Outside Department Secretary's Office – CLM First Floor

Note : Deliverables are to be professionally presented and must contain the completed and signed quality assurance checklist as the last page of your document.

Focus

Following on from Portfolio 1, the focus of this portfolio is to ask you to reflect on one incident that has occurred during the project so far, that has influenced or affected your learning or development.

Portfolio Requirements and Deliverables

1. Personal Development Plan

Update your Personal Development Plan. Show the progress you are making (or not making) towards your goals. Describe the learning activities you have tried during milestone 2/portfolio 2. What successes or difficulties are you having? Why? What are your plans relating to these?

Show any updates or changes you are making – change of focus, goals, learning plans, etc. What motivated these changes?

2. Reflective Review

In this section I would like you to focus on **one** single incident (or series of related incidents) that has occurred during the project or course so far, and has had a direct influence on your learning or development goals.

Using the given resource web links in blackboard webCT, or your own research, write a **Critical Incident Report** in which you describe the identified incident, and link it to your growth or development. In what way did it help (or possibly hinder) you in achieving your goal? In this report you need to provide some

background or context, a detailed description of what happened, your feelings about the incident, how it shaped or hindered your progress towards or achievement of a learning goal, and what you learnt from the experience as you think back on it.

Remember to keep writing in your learning journal each day – a mix of reporting what you did or anything significant that happened, as well as some reflective writing on these events. How did they support your development or learning (or hinder it)? What did you learn? How do you feel?

What is motivating or frustrating you? How can you use this in your growth and development? Has this taught you something about yourself, your learning?

Write about how milestone 2 and portfolio 2 went. What worked or didn't work? Did you learn something? How will this affect your approach to future milestones?

Assessment

Once again, marks for the portfolio will be awarded based on the level of effort and the degree of depth of insight that you show. You need to go **beyond reporting** to **description and insight**... Use the reflective writing resource links off webCT to guide you, and draw on your learning journal.

Remember, each of you will have a unique set of goals and aspirations, and will be focusing on developing different aspects of yourselves. You will also have made different degrees of progress towards your goals. Above all, remember that this is about learning and growing as a person – sometimes one learns more from difficulty and failure than from easy successes.

Keep up the great work!

PORTFOLIO 3 REQUIREMENTS – PF3R

Portfolio

3



IS IIA PROJECT

DEVELOPING A PROFESSIONAL IDENTITY

Submission Details

Due Date: Monday, 3rd May 2010 by 12:00

Place : Information Systems II Mailbox
Outside Department Secretary's Office – CLM First Floor

Note: Deliverables are to be professionally presented and must contain the completed and signed quality assurance checklist as the last page of your document. **All previous Portfolios and marking memos** must be submitted with your final portfolio.

Focus

The focus and objective of this portfolio is to demonstrate and reflect on your own personal learning and development over the duration of this project, and the course in general.

Portfolio Requirements and Deliverables

1. Personal Development

Update your Personal Development Plan. Show the progress you have made (or not made) towards your development goals. Either use a table or have headings and sub-headings for each goal.

For **each** development or learning goal you need to describe and/or discuss the following:

- initial goal and motivation
- proposed resources and learning activities
- actual learning activities undertaken and show evidence of how you undertook or used these (refer to items that you have included in the portfolio of evidence as detailed below)
- successes or difficulties you had and why
- your overall feeling relating to this goal and the learning process

2. Portfolio of Evidence

Include any readings, research, tools, evaluations, etc. that relate to the learning goals discussed in your personal development. Please make sure that you indicate which goal(s) each item relates to.

3. Reflective Review

In this section I would like you to **focus on your overall experience of creating and "implementing" your own personal development plan**.

Describe how you felt about the requirement to do one, level of motivation in attempting to achieve your goals, its perceived relevance to your studies and long term career, and the overall experience.

Describe briefly your highs and lows, what you learnt, difficulties, successes, frustrations, etc. Use quotes from your learning journal to illustrate these feelings or points.

Finally, describe your overall feelings relating to the project.

- What did you learn?
- What did you discover about yourself?
- How did it go?
- What would you do differently next time?

4. Learning Journal

Please submit your learning journal. The actual content will not be marked but I would like to see how you used it and the types of things you commented on. There is a mark for submission regardless of what it contains.

5. Previous Portfolios

Please resubmit all previous portfolios and marking memos. I need to have every student's portfolio 1, 2 and 4, together with this submission.

Assessment

Once again, marks for the portfolio will be awarded based on the level of effort and the degree of depth of insight that you show. You need to go **beyond reporting** to description and insight… Use the reflective writing resource links off webCT to guide you and draw on your learning journal.

Remember, each of you had your own unique set of goals and aspirations, and have been focusing on developing different aspects of yourselves. You will also have made different degrees of progress towards your goals. Above all, remember that this is about learning and growing as a person – sometimes one learns more from difficulty and failure than from easy successes.

I hope that you have all gained something from this experience! Well done !!!!

LEARNING CONTRACT TEMPLATE – LCTMP

LEARNING AND DEVELOPMENT CONTRACT TEMPLATE

Learning or Development Objectives **(What are you going to learn ?)**	**Resources and Strategies** **(How are you going to learn it ?)**	**Target Date for Completion**	**Evidence and Validation** **(How are you going to know that you have learned it? How are you going to prove that you have learned it?)**	**Motivation** **(Why is this an important goal for you?)**
E.g. Leadership	e.g. Reading of books or articles e.g. Online web searches e.g. survey of project team	e.g. MS 3	e.g. I am going to provide a list of readings and comment on valuable points or insights that helped me understand leadership and made me feel more confident. e.g. I will ask my team to do a peer evaluation of my leadership skills or improvement…	I would like to lead systems development projects …
E.g. Time Management				
E.g. Planning				
E.g. Public Speaking				
E.g. Report Writing				

PORTFOLIO 3 UPDATES AND FEEDBACK FROM PF 1 AND 2

Portfolio

3



IS IIA PROJECT

DEVELOPING A PROFESSIONAL IDENTITY

Updates and Feedback from PF 1 and 2

1. Personal Development

You need to go back to your original goals and describe all the required aspects:

- initial goal and motivation
- proposed resources and learning activities
- actual learning activities undertaken and show evidence of how you undertook or used these (refer to items that you have included in the portfolio of evidence as detailed)
- successes or difficulties you had and why
- your overall feeling relating to this goal and the learning process

2. Reflective Writing

Please read through the requirements and guidelines carefully – although this writing is a reflection it needs to have some clear focus – not just rambling thoughts that relate vaguely to the project. The marking memo clearly shows what I am allocating marks for.

3. Overall Portfolio Marks

Based on your efforts so far your final portfolio mark will be calculated as follows: the HIGHER of

1. (PF 1 + PF 2 + PF 3 + PF 4)/4 + 5% — students who did consistently well (bonus 5% for consistent effort)

   OR

2. (3 * PF 3 + PF 4)/4 — students whose PF 3 was significantly better than their earlier milestones

NB – if a student received 0% for non-submission the 0% will count.

4. Portfolio of Evidence

You must include any readings, research, tools, evaluations, testimonials, etc. that relate to the learning goals discussed in your personal development. **Do not just reference a website – include the actual content that you used.** Please make sure that you indicate which goal(s) each item relates to.

Portfolio

1



IS II PORTFOLIO FEEDBACK AND ASSESSMENT – DEVELOPING A PROFESSIONAL IDENTITY

STUDENT NAME _____ TEAM NO ___

Ideal Job Profile **Max Mark 20 Mark Awarded ___**

	Excellent	Very Good	Acceptable	Needs additional work	Mark
(10) Job Description	(9-10) Portfolio contains the original job advert/description The description has been **well supplemented** by additional research on similar jobs / positions	(7-8) Portfolio contains the original job advert/description The description has been **supplemented** by additional research on similar jobs / positions	(4-6) Portfolio contains the original job advert/description The description has been **supplemented to some degree** by a little additional research on similar jobs / positions	(0-3) Portfolio contains the original job advert/description **No additional research** on similar jobs / positions given	
(10) Job Profile	(9-10) **A well organized, comprehensive, detailed and appropriate** job profile has been drawn up based on the chosen job/position and the additional research.	(7-8) The job profile is **fairly** • **well organized** • **comprehensive** • **detailed** • **appropriate** based on the chosen job/position and the additional research.	(4-6) The job profile • has **some level of organization** • **omits some areas** • is **not sufficiently detailed** • is **not very appropriate** based on the chosen job/position and the additional research.	(0-3) The job profile • is **not well organized** • **omits several areas** • is **not sufficiently detailed** • is **not very appropriate** based on the chosen job/position and the additional research.	

Personal Analysis **Max Mark 20 Mark Awarded ___**

(10) SWOT Analysis **Content**	(9-10) provides a **comprehensive and well thought out** analysis of abilities as related to job profile above	(7-8) provides a **good and well thought out** analysis of abilities as related to job profile above	(4-6) provides a **fair or superficial** analysis of abilities as related to job profile above	(0-3) provides an **incomplete and/or superficial** analysis of abilities as related to job profile above	
(10) SWOT Analysis **Discussion**	(9-10) provides a **mature and objective** reflection on the SWOT and **relates the "results"** to career goals and aspirations	(7-8) provides a **relatively mature and objective** reflection on the SWOT and **relates the "results"** to career goals and aspirations	(4-6) provides a **fair reflection** on the SWOT with **some links** made to career goals and aspirations	(0-3) provides a **superficial or biased reflection** on the SWOT with **some / few links** made to career goals or aspirations	

Personal Development Plan **Max Mark 20 Mark Awarded ___**

(10)	(9-10)	(7-8)	(4-6)	(0-3)	
Personal Development Goals	• Specifies an **appropriate mix** and number of learning and development goals • goals are **focused and strongly related** to job profile and SWOT • motivation **strongly linked** to job profile and SWOT	• Specifies a **good mix** and number of learning and development goals • goals are **focused and well related** to job profile and SWOT • motivation **well linked** to job profile and SWOT	• Specifies a **fair mix** and number of learning and development goals • goals are **focused and/or related** to job profile and SWOT • motivation **linked** to job profile and SWOT	• learning and development goals are **insufficient** • goals are **unfocused and/or unrelated** to job profile and SWOT • motivation **not linked** to job profile and SWOT	
(10)	(9-10)	(7-8)	(4-6)	(0-3)	
Personal Development Plan	Specifies **all** of the following • clear, achievable development goals • resources and strategies • deadlines • proposed evidence of learning for **all** learning / development goals	Specifies **all/the majority** of the following • clear, achievable development goals • resources and strategies • deadlines • proposed evidence of learning for **all /most** learning/development goals	Specifies **some** of the following • clear, achievable development goals • resources and strategies • deadlines • proposed evidence of learning for **all / most / some** learning/development goals	Specifies **few** of the following • clear, achievable development goals • resources and strategies • deadlines • proposed evidence of learning for **some** learning/development goals	

Reflective Review **Max Mark 20 Mark Awarded ___**

(20)	(17-20)	(14-16)	(10-13)	(0-9)	
Portfolio Reflection	Your reflective writing provides a **thoughtful and deep** description of your overall experience of doing this portfolio, and includes references to **many** of the following • feelings relating to **doing these portfolios** and keeping a learning journal (both positive and negative) • the **goals of the portfolio** (directing your own growth and development) • comments on your chosen development goals and aspirations; your reservations, doubts, fears, excitement… • well chosen quotes from or references to your learning journal	Your reflective writing provides a **good** description of your overall experience of doing this portfolio, and includes references to **many** of the following • feelings relating to **doing these portfolios** and keeping a learning journal (both positive and negative) • the **goals of the portfolio** (directing your own growth and development) • comments on your chosen development goals and aspirations; your reservations, doubts, fears, excitement… • well chosen quotes from or references to your learning journal	Your reflective writing provides a **good** description of your overall experience of doing this portfolio, and includes references to **some** of the following • feelings relating to **doing these portfolios** and keeping a learning journal (both positive and negative) • the **goals of the portfolio** (directing your own growth and development) • comments on your chosen development goals and aspirations; your reservations, doubts, fears, excitement… • well chosen quotes from or references to your learning journal	Your reflective writing provides a **fair** description of your overall experience of doing this portfolio, and includes references to **a few** of the following • feelings relating to **doing these portfolios** and keeping a learning journal (both positive and negative) • the **goals of the portfolio** (directing your own growth and development) • comments on your chosen development goals and aspirations; your reservations, doubts, fears, excitement… • well chosen quotes from or references to your learning journal	

Professionalism **Max Mark 20 Mark Awarded ___**

(10)	(9-10)	(7-8)	(4-6)	(0-3)	
Professionalism	Professionally organized and presented No spelling/grammatical errors	Very well organized and presented Very few spelling/grammatical errors	Well organized and presented Few spelling/grammatical errors	Not well organized and/or presented Several spelling/grammatical errors	
(10)	(9-10)	(7-8)	(4-6)	(0-3)	
Overall Effort	Excellent effort shown overall	Very good effort shown overall	Good effort shown overall	Fair effort shown overall	

Comments: _____

_____

_____

_____

Total Mark _____ %

Assessor: Susan Benvenuti **Signed:** _____ **Date:** February 2010

Portfolio

2



IS II PORTFOLIO FEEDBACK AND ASSESSMENT – DEVELOPING A PROFESSIONAL IDENTITY

STUDENT NAME _____ TEAM NO ___

Personal Development Plan **Max Mark 40** **Mark Awarded** ___

(10) Personal Development Plan (PDP)	(9-10) Plan has been updated or refined and specifies all of the following • clear, achievable development goals • resources and strategies • deadlines • proposed evidence of learning for all learning / development goals	(7-8) Plan has been updated or refined and specifies all of the following • clear, achievable development goals • resources and strategies • deadlines • proposed evidence of learning for all /most learning/development goals	(4-6) Plan has been updated or refined and specifies all of the following • clear, achievable development goals • resources and strategies • deadlines • proposed evidence of learning for all / most / some learning/development goals	(0-3) Plan has been updated or refined and specifies all of the following • clear, achievable development goals • resources and strategies • deadlines • proposed evidence of learning for some learning/development goals	
(10) Motivation and discussion on updates and changes to PDP	(9-10) A detailed discussion is given relating to the changes or refinements made to your PDP. (If you were happy with your previous PDP and made no changes – then explain why.)	(7-8) A good discussion is given relating to the changes or refinements made to your PDP. (If you were happy with your previous PDP and made no changes – then explain why.)	(4-6) A fair discussion is given relating to the changes or refinements made to your PDP. (If you were happy with your previous PDP and made no changes – then explain why.)	(0-3) Little discussion is given relating to the changes or refinements made to your PDP. (If you were happy with your previous PDP and made no changes – then explain why.)	
(20) Personal Development Progress	(17-20) Progress against your updated PDP includes detail on all the following • description of learning activities undertaken • interactions or resources • successes / difficulties for each learning / development goal	(14-16) Progress against your updated PDP includes detail on most of the following • learning activities undertaken • interactions or resources • successes / difficulties for most learning / development goals	(10-13) Progress against your updated PDP includes detail on some of the following • learning activities undertaken • interactions or resources • successes / difficulties • for some learning / development goals	(0-9) Progress against your updated PDP includes detail on a few of the following • learning activities undertaken • interactions or resources • successes / difficulties for some learning / development goals	

Note – you don't have to have made progress or undertaken activities for all your goals but you need to show your progress and explain your ongoing plan. E.g. focusing on 1 for this milestone – will do the others next time, etc.

Reflective Review **Max Mark 20 Mark Awarded ___**

(20)	(17-20)	(14-16)	(10-13)	(0-9)	
Critical Incident Report	Your Critical Incident Report provides a **thoughtful and deep description** of your chosen incident and includes the **majority** of the following • A **description** of the **context** / background of the incident • A **detailed** description of the incident – what actually happened • Your **feelings** about what happened – during the incident and afterwards • How it **contributed to progress** towards a development goal OR **hindered** you in trying to reach a particular goal • **Lessons learned** from the incident – as you think back on it afterwards	Your Critical Incident Report provides a **thoughtful description** of your chosen incident and includes the **many** of the following • A **description** of the **context** / background of the incident • A **detailed** description of the incident – what actually happened • Your **feelings** about what happened – during the incident and afterwards • How it **contributed to progress** towards a development goal OR **hindered** you in trying to reach a particular goal • **Lessons learned** from the incident – as you think back on it afterwards	Your Critical Incident Report provides a **good description** of your chosen incident and includes the **several** of the following • A **description** of the **context** / background of the incident • A **detailed** description of the incident – what actually happened • Your **feelings** about what happened – during the incident and afterwards • How it **contributed to progress** towards a development goal OR **hindered** you in trying to reach a particular goal • **Lessons learned** from the incident – as you think back on it afterwards	Your Critical Incident Report provides a **fair description** of your chosen incident and includes the **a few** of the following • A **description** of the **context** / background of the incident • A **detailed** description of the incident – what actually happened • Your **feelings** about what happened – during the incident and afterwards • How it **contributed to progress** towards a development goal OR **hindered** you in trying to reach a particular goal • **Lessons learned** from the incident – as you think back on it afterwards	

Professionalism **Max Mark 20 Mark Awarded ___**

(10)	(9-10)	(7-8)	(4-6)	(0-3)	
Professionalism	Professionally organized and presented No spelling/grammatical errors	Very well organized and presented Very few spelling/grammatical errors	Well organized and presented Few spelling/grammatical errors	Not well organized and/or presented Several spelling/grammatical errors	
(10)	(9-10)	(7-8)	(4-6)	(0-3)	
Overall Effort	Excellent effort shown overall	Very good effort shown overall	Good effort shown overall	Fair effort shown overall	

Comments:

_____

_____

Total Mark _____/80 **Final Mark** _____ %

Assessor: Susan Benvenuti **Signed:** _____ **Date:** March 2010

Portfolio

3



IS II PORTFOLIO FEEDBACK AND ASSESSMENT – DEVELOPING A PROFESSIONAL IDENTITY

STUDENT NAME _____ TEAM NO ____

Personal Development Plan **Max Mark 50** **Mark Awarded ___**

(20) Personal Development Plan Goals and Achievements	(17-20) Provides **a detailed description** of your goals, learning/development activities and achievements **for each** of your personally defined goals as follows: • initial goal and motivation • proposed resources and learning activities • actual learning activities undertaken and show evidence of how you undertook or used these (refer to items that you have included in the portfolio of evidence as detailed below) • successes or difficulties you had and why • your overall feeling relating to this goal and the learning process	(14-16) Provides **a good description** of your goals, learning/development activities and achievements **for each** of your personally defined goals as follows: • initial goal and motivation • proposed resources and learning activities • actual learning activities undertaken and show evidence of how you undertook or used these (refer to items that you have included in the portfolio of evidence as detailed below) • successes or difficulties you had and why • your overall feeling relating to this goal and the learning process	(10-13) Provides **some description** of your goals, learning/development activities and achievements **for each** of your personally defined goals as follows: • initial goal and motivation • proposed resources and learning activities • actual learning activities undertaken and show evidence of how you undertook or used these (refer to items that you have included in the portfolio of evidence as detailed below) • successes or difficulties you had and why • your overall feeling relating to this goal and the learning process •	(0-9) Provides **very little description** of your goals, learning/development activities and achievements **for each** of your personally defined goals as follows: • initial goal and motivation • proposed resources and learning activities • actual learning activities undertaken and show evidence of how you undertook or used these (refer to items that you have included in the portfolio of evidence as detailed below) • successes or difficulties you had and why • your overall feeling relating to this goal and the learning process	
(30) Portfolio of Evidence	(24-30) Provides evidence of your learning / development activities for **each** goal and **a detailed description** of how these were **used or contributed** to your goal achievement: Might include any readings, research, tools, evaluations, peer review, relevant journal entries, testimonials by friends or teammates, etc that relate to the learning goals discussed in your personal development.	(20-23) Provides some evidence of your learning / development activities for **each** goal and **a good description** of how these were **used or contributed** to your goal achievement: Might include any readings, research, tools, evaluations, peer review, relevant journal entries, testimonials by friends or teammates, etc that relate to the learning goals discussed	(11-19) Provides some evidence of your learning / development activities for **each** goal and **a description** of how these were **used or contributed** to your goal achievement: Might include any readings, research, tools, evaluations, peer review, relevant journal entries, testimonials by friends or teammates, etc that relate to the learning goals discussed in your personal development.	(0-10) Provides evidence of your learning / development activities for **each** goal: Might include any readings, research, tools, evaluations, peer review, relevant journal entries, testimonials by friends or teammates, etc that relate to the learning goals discussed in your personal development.	

	These might have been included in previous milestones but are included again here, Please make sure that you indicate which goal(s) each item relates to.	in your personal development. **These might have been included in previous milestones but are included again here,** Please make sure that you indicate which goal(s) each item relates to.	**These might have been included in previous milestones but are included again here,** Please make sure that you indicate which goal(s) each item relates to.	**These might have been included in previous milestones but are included again here,** Please make sure that you indicate which goal(s) each item relates to.	
Note – you don't have to have achieved all your goals – show what progress you made … remember like all of us, you are a work in progress and should see your growth and development as ongoing…					

Reflective Review **Max Mark 20 Mark Awarded ___**

(20)	(17-20)	(14-16)	(10-13)	(0-9)

Portfolio Reflection	Your reflective writing provides a **thoughtful and deep description** of your **overall experience** in doing the learning portfolios and includes **most** of the following
	• how you felt about the requirement to do a personal development plan
	• level of motivation in attempting to achieve your goals
	• how relevant did you feel it was to your studies and long term career
	• the overall experience – highs and lows
	• learning opportunities
	• frustrations and / or motivations
	• well chosen quotes from or references to your learning journal
	
	• Finally, describe your overall feelings relating to the **project**:
	  • What did you learn?
	  • What did you discover about yourself?
	  • How did it go?
	  • What would you do differently next time?
		Your reflective writing provides a **thoughtful description** of your **overall experience** in doing the learning portfolios and includes **many** of the following
		• how you felt about the requirement to do a personal development plan
		• level of motivation in attempting to achieve your goals
		• how relevant did you feel it was to your studies and long term career
		• the overall experience – highs and lows
		• learning opportunities
		• frustrations and / or motivations
		• well chosen quotes from or references to your learning journal
		
		• Finally, describe your overall feelings relating to the **project:**
		  • What did you learn?
		  • What did you discover about yourself?
		  • How did it go?
		  • What would you do differently next time?
			Your reflective writing provides a **good description** of your **overall experience** in doing the learning portfolios and includes **several** of the following
			• how you felt about the requirement to do a personal development plan
			• level of motivation in attempting to achieve your goals
			• how relevant did you feel it was to your studies and long term career
			• the overall experience – highs and lows
			• learning opportunities
			• frustrations and / or motivations
			• well chosen quotes from or references to your learning journal
			
			• Finally, describe your overall feelings relating to the **project:**
			  • What did you learn?
			  • What did you discover about yourself?
			  • How did it go?
			  • What would you do differently next time?
				Your reflective writing provides a **description** of your **overall experience** in doing the learning portfolios and includes **some** of the following
				• how you felt about the requirement to do a personal development plan
				• level of motivation in attempting to achieve your goals
				• how relevant did you feel it was to your studies and long term career
				• the overall experience – highs and lows
				• learning opportunities
				• frustrations and / or motivations
				• well chosen quotes from or references to your learning journal
				
				• Finally, describe your overall feelings relating to the **project:**
				  • What did you learn?
				  • What did you discover about yourself?
				  • How did it go?
				  • What would you do differently next time?

Learning Journal **Max Mark 20 Mark Awarded ___**

(10) Submitted	(10) Learning journal submitted with milestone			(0) No learning journal submitted	
(10) Overall Effort	(8-10) Frequent and detailed entries made	(6-7) Frequent and/or relatively detailed entries made	(4-5) Entries made now and then and/or little detail	(0-3) Few or no entries made	

Professionalism **Max Mark 10 Mark Awarded ___**

(10) Professionalism and Overall Effort	(9-10) Professionally organized and presented No spelling/grammatical errors Excellent effort shown overall	(7-8) Very well organized and presented Very few spelling/grammatical errors Very good effort shown overall	(4-6) Well organized and presented Few spelling/grammatical errors Good effort shown overall	(0-3) Not well organized and/or presented Several spelling/grammatical errors Fair effort shown overall	

Comments: _____

Total Mark _____ %

Assessor: Susan Benvenuti **Signed:** _____ **Date:** _____

PORTFOLIO 1 QUALITY ASSURANCE CHECKLIST – PF1QA

Portfolio

1



QUALITY ASSURANCE CHECKLIST

Student Name: _____ Student Number: _____

Team Number : _____ Team Name : _____

Requirement	Degree of Completeness
A "dream job" has been selected and included	
A profile of the type of person that would be "perfect" for the job has been developed including the knowledge, skills, experience, attributes, interests, attitudes, etc. that such a person would ideally possess.	
A personal SWOT analysis has been done	
A personal development plan has been drawn up using a learning contract as a basis	
A reflective review is included	
I have tried to write in my journal everyday and have drawn on my thoughts in my reflective review	
Any comments you wish to make:	

(5 = TOTALLY COMPLETE, 3 = PARTIALLY COMPLETE, 1 = TOTALLY INCOMPLETE)

STUDENT DECLARATION

I,_____ hereby declare that the attached deliverable submitted for Portfolio _____ is my own, original and unaided work.

Signed _____ Date _____

Please answer the following as honestly as possible (your answers will have no bearing on your marks):

I found this portfolio challenging strongly agree agree neutral disagree strongly disagree

I found this portfolio stressful strongly agree agree neutral disagree strongly disagree

I found this portfolio motivating strongly agree agree neutral disagree strongly disagree

I learned something about myself in doing this portfolio strongly agree agree neutral disagree strongly disagree

I found writing a learning journal

- Difficult strongly agree agree neutral disagree strongly disagree
- Challenging strongly agree agree neutral disagree strongly disagree
- Stressful strongly agree agree neutral disagree strongly disagree
- Enjoyable strongly agree agree neutral disagree strongly disagree

INFO2000 PROJECT 2010

PORTFOLIO 2 QUALITY ASSURANCE CHECKLIST – PF2QA

Portfolio

2



QUALITY ASSURANCE CHECKLIST

Student Name: Student Number:

Team Number : _____ Team Name : _____

Requirement	Degree of Completeness
Your Personal Development Plan has been updated with progress and/or changes	
Your reflective review is structured as a Critical Incident Report	
You have tried to write in your journal everyday and have drawn on your thoughts in your reflective review	
Any comments you wish to make:	

(5 = TOTALLY COMPLETE, 3 = PARTIALLY COMPLETE, 1 = TOTALLY INCOMPLETE)

STUDENT DECLARATION

I,_____ hereby declare that the attached deliverable submitted for Portfolio _____ is my own, original and unaided work.

Signed Date

Please answer the following as honestly as possible (your answers will have no bearing on your marks):

I found this portfolio challenging strongly agree agree neutral disagree strongly disagree

I found this portfolio stressful strongly agree agree neutral disagree strongly disagree

I found this portfolio motivating strongly agree agree neutral disagree strongly disagree

I learned something about myself in doing this portfolio strongly agree agree neutral disagree strongly disagree

I found writing a learning journal

- Difficult strongly agree agree neutral disagree strongly disagree
- Challenging strongly agree agree neutral disagree strongly disagree
- Stressful strongly agree agree neutral disagree strongly disagree
- Enjoyable strongly agree agree neutral disagree strongly disagree

PORTFOLIO 3 QUALITY ASSURANCE CHECKLIST – PF3QA

Portfolio

3



QUALITY ASSURANCE CHECKLIST

Student Name: _____Student Number: _____

Team Number : _____ Team Name : _____

Requirement	Degree of Completeness
Personal Development Plan which summarises all your goals and achievements	
Portfolio of Evidence – might include any of the following: readings, research, tools, evaluations, peer review, relevant journal entries, testimonials by friends or teammates, etc	
Reflective Review for the overall portfolio and project experience	
Learning Journal	
All previous Portfolios and Marking Memos 1,2 and 4	
Any comments you wish to make:	

(5 = TOTALLY COMPLETE, 3 = PARTIALLY COMPLETE, 1 = TOTALLY INCOMPLETE)

STUDENT DECLARATION

I,_____ hereby declare that the attached deliverable submitted for Portfolio _____ is my own, original and unaided work.

Signed _____ Date _____

Please answer the following as honestly as possible (your answers will have no bearing on your marks):

I found this portfolio challenging strongly agree agree neutral disagree strongly disagree

I found this portfolio stressful strongly agree agree neutral disagree strongly disagree

I found this portfolio motivating strongly agree agree neutral disagree strongly disagree

I learned something about myself in doing this portfolio strongly agree agree neutral disagree strongly disagree

I found writing a learning journal

- Difficult strongly agree agree neutral disagree strongly disagree
- Challenging strongly agree agree neutral disagree strongly disagree
- Stressful strongly agree agree neutral disagree strongly disagree
- Enjoyable strongly agree agree neutral disagree strongly disagree

INFO2000 PROJECT 2010

APPENDIX C: ETHICS DOCUMENTS

The following is contained in this appendix:

	Document	Brief Description
C.1	**Participant Consent Form**	Every student in the cohort was given this form and briefed on its contents. The full set of signed forms is available.
C.2	**Ethics Clearance Letter**	Electronic copy of ethics clearance letter containing research protocol number.



Developing a Professional Identity
Research Participation Consent

July 2010

Dear IS II Student

As I mentioned during my introductory talk at the beginning of this year, I am currently engaged in studying towards the degree of Masters in Education focusing on Tertiary Teaching and Learning here at Wits University. Based on the work submitted by the students in this class for their Personal Development Portfolios I would like to broaden my research to include that aspect of the INFO2000 course.

Your input to my research will be extremely valuable and appreciated, but is entirely voluntary, so the aim of this document is firstly to define and explain the aims and approach of my research, and secondly to allow each participant in this course to either agree to, or excuse themselves from, participating in my research.

Please read through this document carefully and feel free to ask me any questions about its content. Also please note that in agreeing to participate, you are not bound or obliged to continue with your participation should you change your mind at any time. You have the right to withdraw from the research at any time.

Many thanks for your time.

Susan Benvenuti

Course Coordinator

Research Aims

My research is looking at the impact that both change management principles and specific self-directed learning models have on students' learning and experiences, when these principles and models are used as an integral part of course design.

The aim of the research is to evaluate aspects of the course (the Personal Development Portfolios) in terms of its design and objectives, **not to assess** individual student performance.

Research Approach and Data Collection and Analysis

Using the course evaluations and work produced by students in previous years as a starting point, the Personal Development Portfolio aspect of the course was introduced and subsequently redesigned to incorporate self-directed learning models.

The research will attempt to examine the impact that these specific self-directed learning models may have on students' learning and experiences, when these are used as an integral part of the course design.

The research approach will follow a course evaluation type approach but will use a rigorous approach to collecting and analyzing the data. In previous years I have used course evaluation questionnaires at the end of each course I have taught, and also looked carefully at the work produced by students during the course and for assessment purposes. Using this data I make changes to the content and methods of the course in an attempt to improve it.

For my research purposes, I will draw data from aspects of your portfolios to focus on specific questions I might have. In addition, I will use observations gained from my interaction with the class as well as from looking at the work you produced during this course. As all the analysis and interpretation of this data will take place now (after the completion of the course) the analysis will in no way affect the assessment (course mark) of any individual student.

What does your participation involve?

In agreeing to participate in this research you are doing the following:

1. Giving me permission to use data drawn from portfolios that you have submitted during the course, as part of the data that I will consider in my analysis.
2. Agreeing that any input to a Small Group Discussion evaluation session may be used in my research report.
3. Allowing me to use the portfolios and learning journals you produced to evaluate the design of this course and its impact on student learning (not your performance itself).

How will the data be used and presented/published?

- In working with the data collected, each participant will be given a code, and the data will thereafter be associated with the code and **not with student names or numbers.**
- In addition, some of the data will be used in a general or summative way, with no attribution to individuals.
- Care will be taken to ensure that the identity of each participant is not revealed and cannot be identified by a reader of the final research report.
- Participants may, if they wish, examine the analysis of the data prior to its final submission, and may ask for their comments to be added to the report.

When you are sure that you have read and understood the contents of this document, please complete the following:

I, _____ have read and understood the contents of this document and hereby agree / do not agree (cross out the non-applicable option) to participate in the research project outlined above.

I understand that in agreeing to participate that

- I am giving permission to the researcher to use data drawn from portfolios that I produced during the course, for purposes of analysis and interpretation
- I have the right to withdraw from the research at any time
- my identity will be protected and not disclosed to any outsider or reader of the research
- I have the right to view and comment on any analysis or interpretation made before the research is submitted or published
- the researcher guarantees that the research will in no way impact on my results for this or any subsequent courses in IS

Signed _____ Date _____

_____

C.2 Ethics Clearance

Wits School of Education

27 St Andrews Road, Parktown, Johannesburg, 2193 • Private Bag 3, Wits 2050, South Africa
Tel: +27 11 717-3064 • Fax: +27 11 717-3100 • E-mail: enquiries@educ.wits.ac.za • Website: www.wits.ac.za

Student number: 8705208E
Protocol number: 2011ECE158**C**

24 January 2012

Mrs Susan Benvenuti
8 Strelitzia Street
MORNINGSIDE
2057

Dear Mrs Benvenuti

Re: Application for Ethics: Master of Education

Thank you very much for your ethics application. The Ethics Committee in Education of the Faculty of Humanities, acting on behalf of the Senate has considered your application for ethics clearance for your proposal entitled:

"Facilitating the Development of Self-Directed Learning Skills in Information Systems Students".

The committee recently met and I am pleased to inform you that clearance was granted. The committee was delighted about the ways in which you have taken care of and given consideration to the ethical dimensions of your research project. Congratulations to you and your supervisor!

Please use the above protocol number in all correspondence to the relevant research parties (schools, parents, learners etc.) and include it in your research report or project on the title page.

The Protocol Number above should be submitted to the Graduate Studies in Education Committee upon submission of your final research report.

All the best with your research project.

Yours sincerely

M Mabeta

Matsie Mabeta
Wits School of Education
(011) 717 3416

Cc Supervisor: Prof. J Castle (via email)