Qualitative Differences In Post-Compulsory Pre-University Maltese Students' Accounts Of Their Networked Learning Experiences

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This thesis is entirely my own work and and has not been submitted for the award of a higher degree elsewhere

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Past the experience generating data for this doctoral research study I presented “Doctoral Work-in-Progress: a glimpse through phenomenographic interviewing and the research process” during the PhD e-Research & TEL mini-conference held in April 2013 at Lancaster University, UK.

A short paper inspired by this doctoral research and titled “Phenomenography for researching aspects of networked learning: beyond the match of underlying values and beliefs” was presented at the 9th International Conference on Networked Learning held in April 2014 at the University of Edinburgh, UK.

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Abstract

This thesis investigates variation in how Maltese post-compulsory pre-university computing students account for their networked learning (NL) experiences, and variation in how these students account for teachers and other students as contributors to these experiences. It advances a constitutive view of NL experiencing configured as an emergent progression of expanding awareness hence transcending portrayals emphasising contrasts and conflicts.

Phenomenographic results are based on a purposive sample of thirty-two participants. Qualitative differences in students' accounts on their NL experiencing is constituted by four, hierarchically inclusive descriptions incorporating the use of the Internet (1) for flexibly accessing resources, (2) to follow through individual self-managed learning, (3) for learning in connectivity with others for increasing personal learning, (4) for learning in community with others consciously facilitating others' learning. Experiencing NL is projected as critically structured by the use of technology, learning activity and related goals, and self-positioning in relation to others for learning. In expanding awareness the student is portrayed as shifting from 'having an experience' standing outside the learning system to 'making an experience' standing as an integral part of the learning system. Qualitative differences in students' accounts of teachers and other students as contributors to their NL experiencing is constituted by three, hierarchically inclusive descriptions critically structured by perceived roles played. This variation incorporates (1) the teacher as director and other students as indirect consequence, (2) the teacher as guide and other students as direct learning means, (3) the teacher as convener and other students as significant co-actors in learning.

These descriptions may serve to inform the design of online learning systems meant to improve students' experiences of learning using networked technologies.

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Abbreviated terms

BCP – Basic Computing Principles (online course)

COI – Community of Inquiry

CoP – Community of Practice

CMC – Computer Mediated Communication

CPD – Continued Professional Development

CSCL – Computer Supported Collaborative Learning

HE – Higher Education

ICT – Information and Communication Technologies

NL – Networked Learning

STEM – Science, Technology, Engineering and Mathematics

TEL – Technology Enhanced Learning

UOM – University of Malta

VLE – Virtual Learning Environment

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Chapter 1: Introduction to the Research Study

1.1 Introduction

In the last decade, social and technological developments saw the use of networked technologies becoming a 'must' rather than a 'should' in the formal learning setting (Mason & Rennie, 2008; Ellis & Goodyear, 2010). Progressive educationalists such as Prensky (2001, 2009), Downes (2005) and Oblinger & Oblinger (2005) have long been advocating radical change and the need to embrace interactive and networked technologies by integrating them into teaching-learning (Ashwin, 2012) activities, thus deeply exploiting their two-way communicative possibilities. For some time a number of educational researchers cautioned against radical action because in the formal learning setting students are not found to be as digitally literate as some would have liked them to be (Thinyane, 2010; Ratliff, 2009; Elwood & MacLean, 2009; Bennet, Maton & Kervin, 2008), even if simultaneously students are reported to be ubiquitously taking up using networked technologies for their informal learning activity (Conole, de Laat, Dillon & Darby, 2006; Khalid, Rongbutsri & Buus, 2012; Daalsgard, 2014). It is now more a question of how networked technologies may be effectively used to empower students to direct their own learning (Mayes & de Frietas, 2007), what the students experience to help understand the actual use of learning provision, and to help estimate students' learning needs and project future learning environments (Waycott & Kennedy, 2009; Sharpe, Beetham, De Freitas & Conole, 2010).

The integration of networked technologies in educational curricula was foreseen (Bryant, 2006; McLoughlin & Lee, 2008). I anticipate this happening also in the Maltese post-compulsory pre-university sector which constitutes the context of this research study. In several American states it has become compulsory for students of this educational level to have online learning experience to be able to graduate (Tonks, Weston, Wiley & Barbour, 2013; Borup, Graham & Davies, 2012). Distance education at this educational level is nowadays a possible

alternative ('The International Centre for Distance Learning' is but one example). In mindfulness of ongoing socio-technological change and the challenge this represents for our thinking about learning and teaching practice (Harasim, 2012), research on the post-compulsory pre-university student's experience of learning using networked technologies is considered an important enterprise to pursue, equally so in the Maltese setting.

1.2 The NL Approach

NL is a specific form of learning approach using networked technologies within the broader field of educational technology (Conole, 2010; Parchoma, 2011). It is defined as

> "learning in which information and communication technology (ICT) is used to promote connections: between one learner and other learners, between learners and tutors; between a learning community and its learning resources" (McConnell, Hodgson & Dirckinck-Holmfeld, 2012, p.6).

NL is set apart from other forms of learning approaches employing networked technologies in emphasis of the two-way communication possibilities for learning involving human-human relations as well as human-resources relations. In its profoundness NL is even distinguished from other forms of learning approaches, for example, connectivism (Siemens, 2004) and computer-supported collaborative learning (CSCL). These learning approaches are seen as coming close to the notion of NL but missing out on the assumed humanistic and critical theory aspects of learning in relation to others (Hodgson, McConnell & Dirckinck-Holmfeld, 2012), and/or emphasising the human-human relation more than the human-resources relation (Jones, Ferreday & Hodgson, 2008).

1.3 Research Motivation

Post-compulsory pre-university education is intended to support post-secondary students transitioning to higher education (HE) to become independent learners as expected of students studying and learning at tertiary level (The Higher

Education Academy Website). NL is advanced for its potential to promote the development of self-management, self-direction, communication skills, group working capabilities, and critical thinking skills (Goodyear, 2001; Oliver, 2001; McConnell, 2000, 2006). This potential closely matches the higher order aims of post-compulsory pre-university education leading the student towards learning autonomy. Necessarily, post-compulsory pre-university students need to take control and responsibility of their learning as well as strive towards becoming 'independent of mind' and capable of collaborating with others (Oliver, 2008) if they mean to succeed with their studies at the university (Harnisch & Taylor-Murison, 2012).

In a technology-rich, networked world which concurrently struggles to humanise itself and to achieve sustainability in its uncertainty, there are several more reasons why NL merits consideration as a means to support post-compulsory pre-university students even in the case of a small island context such as Malta wherein this study is situated.

Although adolescent post-compulsory pre-university students appreciate the adult-like attitude expected at post-compulsory level, they still need befitting support (Dziubinski, 2014). NL is considered to be a potentially feasible alternative solution to the high level of supervision some post-compulsory pre-university educational providers are assuming (Dziubinski, 2014) hence delaying the student's transition period – from the expectation of others directing and supervising learning to self-directed learning attitudes – to the first year at the university rendering the post-compulsory pre-university years an extension of the secondary school.

In technology-rich networked regions, students are found to have good access to mobile and internetworking technologies and are using networked technologies in a substantial way even if to date this is still mostly for living purposes (Cutajar, 2011a; Waycott & Kennedy, 2009; Conole et al, 2006; Conole & Siemens, 2011). Furthermore, coming to the classroom equipped with computers, tablets and smartphones, students are finding the prevalent instruction strategy ineffective (Bonanno, 2010). This situation prompts exploration of alternative learning

strategies which may be better suited to respond to the learning needs of students living in a technology-rich, networked world.

Recognising the added benefit (Stuart, Lido, Morgan, Solomon & May, 2011), educational institutions nowadays encourage students to take up extra-curricular activities. Some students are also observed taking up paid part-time work (Garcia, 2012). Although extra-curricular activities possibly enrich the student's learning experience this also eats into the student's study time (Darolia, 2014). The NL approach may help to answer better to these students' changing learning needs too.

NL pioneers (Goodyear, Banks, Hodgson & McConnell, 2010) admit that since its beginning NL came under scrutiny for its cost-effectiveness because of its potential to provide quality distance education capitalising on the knowledge, experience and skills different learners (as well as teachers) bring into the learning setting. With the national and international drive to increase the number of students pursuing post-secondary and subsequently university studies beyond compulsory schooling (National Commission for Higher Education, 2009; EU Strategic Framework – Education and Training 2020) and diminishing funds, NL can somehow be employed to capitalise on human others as learning resources in the learning setting as well as to creatively take advantage of the growing base of diverse learning resources and communicative technologies openly available online which can serve to somehow realise quality teaching-learning processes.

Fundamentally, an online learning approach possibly extended into the face-to-face setting (McConnell et al., 2012), NL permits teachers to make their facilitation and supportive teaching activities more transparent and explicit for students to follow up cues. Additionally, it serves to showcase teaching, and in predominantly traditional teaching contexts may set an example to other less progressive (students and) teachers as well.

In the particular case of Malta, Maltese is the national language but both Maltese and English are recognised as official languages (Constitution of Malta). Much classroom teaching is carried out in English, most textbooks are in English and public examinations in Malta are predominantly in English too (Murphy, 2005).

Zammit Mangion (1988) also remarks that the Maltese student's success in learning is necessarily dependent on English proficiency, and in a respected local newspaper Zammit Marmarà (2012) recently wrote that English is the biggest problem hampering the Maltese post-compulsory pre-university student. With its implied online discursive interactivity, NL may potentially serve as a means for students to develop English reading and writing skills.

With its implied flexibility for learning anytime and anywhere NL may also be considered as an effectual and sustainable means to develop the post-compulsory pre-university educational sector for reaching out to students who want to study at this educational level but for some reason or another cannot physically attend face-to-face classes. Already, as aforementioned, there are educational institutions offering distance and hybrid matriculation level courses (the UK-based International Centre for Distance Learning; the UK-based Oxford Open Learning).

Since NL ideally incorporates the pursuit of values such as equity, social justice, diversity and inclusivity (Ryberg, Buus & Georgsen, 2012), widely regarded to be important issues as much as financial and economic stability for sustainability locally and globally (National Commission for Higher Education (NCHE), 2009; GUNi, 2014), it may serve as a counteraction for the rise of networked individualism (Castells, 2001; Turkle, 2011) and different forms of discrimination towards 'learning networks' (Goodyear & Calvalho, 2014).

To some greater or lesser degree the above reasons encouraging the close consideration of NL may be seen as reflecting technological and/or social determinism. I mention this not because I want to open up discussion on this problematic issue but because, at this early stage, I want to make explicit my inclination towards the classic Marxist argument that we both shape and are shaped by technologies (Wesch, 2010). More than the technological and the social sitting separate of each other and us, I prefer to think of them as in a situated generative dance in co-constitution with us. I find that this standpoint further fuels my interest to take up researching NL in belief of making a positive

contribution to the educational technology field of research and possibly an impact on teaching-learning practice in Malta as well.

1.4 Research Background

In outlining the background to this research work I consider

- my research background as the researcher and the practitioner driving this research;
- the research context which frames this research – even if in a fragmented way, through my writing about it I am describing the different aspects of the contextualizing backdrop; and
- the research participants – an important constituent part of the research in their capacity generating research data.

1.4.1 Researcher's contextual roots

In acknowledgement of the fact that "research reflects the values, beliefs and perspectives of the researcher" (Anderson with Arsenault, 1998, p.3) I find it important to clarify where I come from, all the more in my case as I am simultaneously the teaching practitioner involved in the NL experimentation on which this research is based.

The first part of my doctoral journey towards this research study was a period of self-discovery and transformation in terms of my thinking about ontology, epistemology, and research paradigms. This interval permitted me to reflect on the positivistic standpoint I naively assumed to be *the way* for doing research. While for some time I struggled with trying to reposition myself ontologically – asking myself as a human being whether reality existed independently of my own conception and any understanding of it or whether it was the product of my idiosyncratic consciousness (Cohen, Manion & Morrison, 2007), I am now more confident about admitting and accepting uncertainty, not only ontologically but also epistemologically. While objective reality might exist, I have come to recognise knowledge of the world as emergent and in a constant state of change existing by way of my relationship to the world as I believe is the case for

everyone else. I have come to believe that my knowledge will always remain partial, and limited to what I can make out of my interactions with the world at any given moment in time.

In doing research I find myself preferring to keep my options open in conviction that "Different kinds of research approaches produce different kinds of knowledge about the phenomena understudy" (Blaxter, Hughes & Tight, 2010, p.59), even if the experience of doctoral research work revealed to me a personal inclination towards emancipatory and participatory research attitudes. All said, I also recognise that the university where I read my doctoral studies perhaps left its imprint on me as well (Anderson with Arsenault, 1998).

In retrospect I note that my interest in the use of technologies for learning dates back to the time when I was reading undergraduate studies in education. To different degrees across time I pursued this interest not only in my experimentation with technologies with my students but even by my continued professional development (CPD) and research. During the first part of this doctorate I used data collected before, during, and after a run of a home-grown NL course (October-December 2009) described in detail by Cutajar (2011a) to take my interest forward. The research presented here has its roots directly set in one of the preliminary studies (Cutajar & Zenios, 2012) carried out during that time too.

Tied to my professional teaching practice this research brought together my interest and belief in NL for supporting students' learning especially post-compulsory pre-university students, and my newly discovered passion for phenomenography as a research approach. Beyond my interest and the aim of opening exploration of the Maltese post-compulsory pre-university student's experience of NL, I consider this research work an expression of my conviction that to design effectual learning propositions which answer to the students' needs we need to listen to what *they* have to say as major stakeholders and players in teaching-learning processes *on their terms as a collective,* acknowledging that different student voices are not right or wrong but simply *are*, without prejudice. Hence in my research I sought to engage myself in *understanding* the post-

compulsory pre-university student's lived experience of NL rather than passing judgment on it.

1.4.2 Research context and the research participants

In the particular case of Malta, the two-year 'post-secondary' – as it is more commonly referenced locally – study programme is intended for sixteen-year-old students who beyond compulsory schooling seek the Matriculation certificate which allows young adult students to enter university courses. For this certification students study two subjects at advanced level and four subjects at intermediate level. The combination of subjects a student chooses to follow necessarily has to satisfy both the regulations of the Matriculation programme[1] and the requirements of the university course to which they aspire (or possible courses if the student is still undecided).

The research I present here is situated at the G.F. Abela Junior College (referred to hereinafter as 'Junior College'). Managed by the University of Malta (UOM) this is the largest post-compulsory pre-university college of the eight post-secondary providers (National Commission of Higher Education) in the Maltese islands. Extracted from the most recent report "Malta in Figures 2013" published online by the Maltese National Statistics Office (NSO), the post-secondary student population in Malta between 2008 and 2011 averaged 5,853 per annum (p.10), - including both first year and second year students. For the same time span, the average population at the college in question was 1,558 per annum (extracted from information obtained from the Junior College Registrar's Office).

At this college students attend classroom-based 'formal instruction' but are expected to engage in 'guided self-teaching' in preparation for university studies (Junior College Website). This learning setting is close to what you expect at the university. Students have much less direction and supervision than what they are used to in the secondary school at this university-like environment.

[1] The regulations of the Matriculation programme can be found online at Matsec Examinations Board Website (http://www.um.edu.mt/matsec)

Necessarily, this research covers the study of a case. The NL course experience on which this study is based involved post-secondary students who chose to study intermediate computing. Though I admit at the outset that this is a considerable impacting factor on the partiality of results and I am in no way trying to make it sound as less significant, I point out from my observation as a long time teaching practitioner in the post-secondary sector that students who study computing at matriculation level are not necessarily found pursuing technical HE courses and/or careers, hence suggesting that this limiting factor may not be as restrictive as one might imagine. In accordance with the aforementioned available national statistics, the average number of registered first year and second year students studying intermediate computing at the college in question between 2008 and 2011 averaged 118 per annum (extracted information obtained from the registrar's office of the Junior College).

The students who participated in the research study were consenting students who, through the academic year 2011-2012, when in their first year of the Matriculation programme had the opportunity not only to study about e-learning as required by the intermediate computing curriculum, but also to experience it first-hand by way of this NL course which I experimented with them. There were 72 registered first year intermediate computing students on the study programme during that academic year but four students were absent for the whole duration of the course .

The eight-week Moodle-based NL course on basic computing principles presented as an integral part of the curriculum was subdivided into seven study blocks of one or two weeks each incorporating a number of co-operative and/or collaborative learning activities. This course was preceded by a one-week orientation block aimed to permit the students a period of acclimatisation and socialisation (Salmon, 2004) and a post-course test. The unescapable weekly one-hour face-to-face meeting on the student's schedule was used to extend the online course experience.

Fundamentally, the course-design and tutoring strategy were inspired by my first-hand experience of web-based learning reading post-graduate studies with a

renowned UK university and Salmon's (2004) model of online teaching and learning. Although the course implementation permitting this research study structurally did not change much from that described in detail by Cutajar (2011a), in view of my developing understanding of NL, in tutoring the course I tried to further advance the NL ethos moving further away from instructivism and encouraging a more democratic and inclusive mood, even if 26% of the course grade remained tied to participation in collaborative and group learning activities. Additionally, a closed Facebook group was used to help further 'informal' support for learning.[2] Collaborative assessment was not implemented but the students were provided with opportunities to reflect on *how* they approached their studies, and *why*, at the beginning and towards the end of the course (though in passing I note that they were more willing to talk about this in small group conversations face-to-face rather than more "publicly" online – a somewhat telling observation).

1.5 Outline of the research venture

As a teaching practitioner already experimenting with teaching-learning using networked technologies with my students, I found myself asking questions such as: What do *the students* think? What are the *students*' views of this NL experimentation? What is *their* interpretation of the experience? How do *they* consider the teacher and other students in the NL setting? To date, in my teaching context the classroom-based lecture continues to be the assumed teaching-learning strategy. In recent years the adoption of technologies for teaching processes has been observed at the post-secondary college in question, but generally this is to unquestioningly support current classroom practices rather than to rethink them (Margaryan, Littlejohn & Vojt, 2011). At the college I note that notwithstanding their broader life context students tend to conform to traditional pedagogies. Seemingly, their attitudes to learning are influenced by the teaching approaches lecturers adopt with them. But what is the experience of the students when, in such a traditional learning context, there is a

[2] Appendices D1 and D2 present illustrative screenshots of the Moodle-based course-site and the Facebook group

teacher-led effort to move away from face-to-face didactic practice towards the online NL approach? In my research I wanted to get to know about the student's experience from the students themselves.

1.5.1 Research questions

To take forward my research study I specifically asked the following two questions:

1. What are the qualitative differences in Maltese post-compulsory pre-university students' accounts of their Networked Learning experiences?
2. What are the qualitative differences in these students' accounts of teachers and other students as contributors to their experiences of Networked Learning?

At this point it needs to be explicitly clarified that the second research question focuses on a specific issue addressed by the overarching first research question. It specifically spotlights the important and problematic issue of human relations for learning within the context of networked learning. I consider the answers to these two hierarchically inclusive questions as important for *understanding* the student's lived experience of NL through which understanding we may project the future students' learning needs and hence inform curriculum development. That is, the student perspective of NL experiencing and inter-human relationships for learning can potentially help inform learning design and practice as the use of mobile and networked technologies in teaching-learning processes become the norm of the not-so-distant future.

In my two research questions I explicitly refer to students' accounts of the NL experience rather than how students experience it. I do this to acknowledge that in my research I only have access to what is advanced by the participants. In chapter 3 I discuss this issue in further detail.

Even if the two research questions are highly interrelated I chose to consider the variation in the student's accounts on perception of human others for learning when engaging in NL separately because the NL approach suggests a different

form of relating to the teacher and other students for learning than traditional face-to-face methods and which the research participants are accustomed to. Besides, several researchers are found signalling inter-human relations for learning as a source of difficulty (Levy, 2006; Koh, Hill & Barbour, 2010; Nicolajsen, 2014). For answering each of the research questions I wanted to understand the different student voices for what they were as legitimate possibilities.

1.5.2 Chosen Research Strategy

To answer my research questions I chose the phenomenographic approach. Quantitative methods were immediately ruled out because of the newness of the research territory, hence missing a base of literature from which to generate hypotheses to test (Barclay, 2009). Secondly, the holistic perspective (Åkerlind, 2005a) permitted by the phenomenographic approach was considered well suited considering the complexity of NL as a pedagogical approach (De Laat & Lally, 2004; Hodgson, De Laat, McConnell & Ryberg, 2014) combined with, the persisting picture of contrasts and conflicts painted by other researchers studying the students' experiences of learning using networked technologies. In my explorative research investigating Maltese post-secondary pre-university students' experiencing of NL I wanted to go beyond confirming this recurring pattern.

I saw phenomenography as a way for me to *understand* the student's possible interpretations of the NL experience (which I was offering them) from *their stand-point* as much as possible even if my practitioner-researcher influence on the research outcome can never be denied. Necessarily the results of this phenomenographic research are as much a constitution from students' accounts of their own experiences as it is my interpretation of what these student participants chose to contribute to the research. But still phenomenography permitted me to investigate variation in the relation between the student and lived NL experience from the student's perspective. Moreover, through its second order stance (Marton & Booth, 1997) phenomenography permitted me also to

understand the collective of different student voices as all legitimate possibilities. In total, in phenomenography I found myself a way to move away from contrasting and conflicting views to understand variation in students' accounts of their lived experience of NL from their standpoint as much as I could possibly do so as an individual beginning phenomenographer.

1.6 Positioning within the Maltese research context

In the context of Malta, research describing the student experience of using networked technologies surfaces as very limited. Using the Google search engine, Google Scholar, the digital facilities offered by two different universities to search across a number of relevant databases, and an extensive search of the UOM website, I only managed to track down two studies (Busuttil, 2005; Rolè, 2014) situated in a Maltese context on the students' lived experiences of learning using networked technologies. My research work is far removed from Busuttil's (2005) master's level thesis investigating primary student teacher's attitudes towards an online learning course experience using a mixed method approach. However it is in close proximity to Rolè's (2014) newly published doctoral thesis situated in the same local post-compulsory pre-university context investigating students' lived experiences of blended learning using a multi-method interpretative stance. However, my research effort is distinct from Rolè's work in four major ways. The participants of my research are students studying intermediate level computing four years later than Rolè's participants studying Chemistry at advanced level. Hence these two research studies are removed from each other both temporally and by the contextualizing discipline area which Entwistle (2009) points out as a non-trivial factor when it comes to ways of thinking about things and events. More significantly, the phenomenon I investigate and my research focus are also different. Although overall in her research Rolè is similarly taking a second order stand-point to investigate the students' lived experiences of learning using networked technologies, in her context it is a blended form of e-learning experience which is being studied. Meanwhile, in my research context the whole NL course was online, even if the

one-hour weekly face-to-face meeting extending the online learning experience was unavoidable. Furthermore, in her interpretative stance within an over-arching mixed methods research enterprise Rolè (2014) paints the 'basic structures' of the blended learning 'reality' beyond the participants' experience of it, and makes us "conscious of what the world was like before we learned how to see it" (Marton, 1986, p.40). That is, she focuses on the commonalities of the different participants' experiences – however these 'immediate experiences' she claims to be accessing them - to draw out the 'essence' or "What remains constant" (Marton, 1986, p.41). In my phenomenographic stance I turn the research lens on the differences in the collective of student's accounts - whether these incorporate immediate experience or conceptual thought in the assumption of underlying structuring (Marton, 1986) - to paint a picture of students' NL experiencing as expanding awareness (Åkerlind, 2005a), that is awareness characterised by critical focal elements in the person-world relationship rather than critical focal elements of assumed objective reality. In my phenomenographic stance I seek to give meaning to the different learning experiences of students like Rolè (2014) and others (such as Nicolajsen, 2014; Harnisch & Tatlor-Murison, 2012; and Conole et al. 2006) but distinctively I seek to move away from portrayals of contrasts and conflicts.

1.7 Contribution to new knowledge

I consider the answers to the research questions I set out as the first holistic portrayals of the Maltese post-secondary student's experiencing of NL. Even if this research comes in close proximity to one of the two studies which I managed to unearth on the Maltese students' lived experiences learning using networked technologies, I still feel safe saying that my research is a new contribution to knowledge introducing NL in the Maltese post-compulsory pre-university educational scene and advancing a comprehensive description of variation in the post-compulsory pre-university student's experience of networked technologies in the formal learning setting. The research work I present through this investigation is considered to be original work giving some voice to the Maltese post-

compulsory pre-university student, particularly the student studying computing at intermediate level, on the introduction of NL. I am not aware of other phenomenographic work investigating the lived NL experience of the Maltese post-secondary student. Indeed, empirical research specifically targeting the post-compulsory pre-university student's experience of NL is somehow strikingly limited across geographical contexts, meaning that this investigation appears to be an original contribution to knowledge beyond the confines of the Maltese educational scene, although by no means are the findings of this study to be considered as a *complete* description of the students' experiences of learning using networked technologies.

By means of this work I also advance a new way of understanding NL experience. The phenomenographic perspective permitted me to develop a constitutive view of NL experiencing, an alternative view to prevalent outlooks suggesting contrasting views and dissonance. Varying accounts of students' lived experiences are recognised as different ways of *seeing and interpreting* events necessarily dependent on the aspects of a situation which are discerned, hence the experience (Bowden & Marton, 1998). Personally I deem this constitutive viewpoint of NL to be facilitative to distance us from notions of consensus, oppression and tyranny which notions negate the very same values and beliefs NL theoretically seeks to advance.

Advanced as a phenomenographic investigation, as far as I know this study is also the first to employ phenomenography to investigate a case of the Maltese student's experience of learning. Indeed, through my doctoral research journey I found that although phenomenography may be considered as an established approach in certain research spheres it is still very much unknown locally and apparently in the research world at large.

1.8 Structure of the thesis document

The remainder of this thesis document is structured as follows:

In chapter 2 I look at the extant literature on students' experiences of learning using networked technologies. Through this literature review I clarify how the

present study connects to the existing base of knowledge on educational technology.

In chapter 3 I map out the theoretical base framing this phenomenographic research. I precede this by an outline of the philosophical underpinnings of this research approach.

In chapter 4 I set out the research methods I adopted to answer my research questions. I lay down my experience of interviewing the phenomenographic style and my experience analysing data phenomenographically. In a final separate section I discuss the quality of the research.

In chapter 5 I present detailed phenomenographic descriptions separately answering the two research questions. In this chapter I include my analysis of these findings.

In chapter 6 I discuss the research findings highlighting them as bringing forth a new way of understanding NL experiencing. I discuss the findings of this study also in comparison to the previous literature reviewed in chapter 2.

Chapter 7 is the last chapter documenting this thesis. In this chapter I summarise the outcomes of this study, and underline them as a new knowledge contribution. I consider the implications of these findings for teaching-learning practice incorporating the NL approach. I also discuss the constraining factors impacting on the outcomes of this research study and point out possible future research directions.

Chapter 2: The Student Experience: Contrasts & Conflicts

2.1 Introduction

My research work answers questions on the qualitative differences in Maltese post-compulsory pre-university students' accounts of their NL experience, and their perceptions of teachers and students as contributors to this experience. In this chapter I set out to clarify how my research addresses gaps in the existing body of knowledge on the student's experience of learning using networked technologies in the formal learning setting.

As mentioned in the previous chapter, published research on the Maltese students' lived experiences of learning using networked technologies is scarce. Beyond the Maltese context, published research specifically addressing the post-secondary student's experience of learning using networked technologies is also scarce (Rolè, 2014) even if a number of studies in this vein emerged in the last few years (such as Rolè, 2014; Dalsgaard, 2014; Dziubinski, 2014; Borup et al., 2013; Cutajar & Zenios, 2012; Harnisch & Taylor-Murison, 2012; Drexler, 2010), hence suggesting a nascent research body. In general what is emerging from this body of knowledge is a chaotic picture of students' lived experiences of online learning mediated by networked technologies. Different students cannot be expected to be seeing the same learning context and having the same learning experience (Bowden & Marton, 1998). As Prosser & Trigwell (1999) resolved "Students approach their study in terms of their perceptions of the situation in which they find themselves, not their perceptions of the context" (p.81, italics in original text). The persistent picture of contrasts and conflicts prompted me to direct my research effort at getting behind this frontend picture. This is why in my research questions I addressed the qualitative differences in experiencing rather than experiencing in its essence.

I subdivide this literature review into three main sections. In the first section I appraise the chaotic picture of contrasts and conflicts emerging from published literature on the student experience of learning using networked technologies. In

the second section I consider the NL pedagogical approach as a teaching-learning ideal distinct from traditional strategies. In the final section I turn my attention to the holistic perspective as a strategy for painting the picture of the student's experience of NL anew.

2.2 The chaotic picture of the student experience

To some extent the study of the young adult and adolescents' experience of learning using networked technologies in the past decade was influenced by Prensky's (2001) provocative distinction and the rise of a "net generation" (Oblinger & Oblinger, 2005). For some time appeals resounded to draw a closure to the debate on digital natives (Harris, 2010; Rudd, 2006; Jones. 2012; Ryberg & Ryberg Larsen, 2012). Change is undeniable, but for research to move forward we need to steer away from dichotomies about the nature of change (Ryberg, 2012). Ryberg wonders "whether a focus on the technologies and discourse on change might have caused us to lose sight of the ideals" (p.542). Jones (2012) went one step further with his appeal to move away from this debate by suggesting that one possible way of doing this is to consider how the way teachers implement technologies for learning impacts on students' take up and use of technologies; this in view of Margaryan et al.'s (2011) findings that students' attitudes to learning using technologies are influenced by teachers' approaches. In my research I follow up on this suggestion somewhat. But rather than considering how the structuring of the formal learning environment impacts on students' activities for learning I focus on giving meaning to the student's activity for learning.

2.2.1 The rise and fall of dichotomies

A good number of studies, mostly employing quantitative or mixed methods, focus on the students' use of networked technologies for learning (Busuttil, 2005; Conole et al., 2006; Deepwell & Malik, 2008; Kennedy, Judd, Churchward, Gray & Krause, 2008; Ratliff, 2009; Elwood & MacLean, 2009; Ramanau, Hosein & Jones, 2010; Cutajar, 2011a; Jones & Healing, 2010; Waycott et al., 2010;

Thinyane, 2010). Across different continents, geographical locations and learning contexts, these empirical studies revealed the speculative nature of Prensky's (2001) "digital native-digital immigrant" dichotomy. Different researchers do not criticise calls for using the opportunity of mobile and networked technologies for the transformation of teaching-learning processes. Some explicitly encourage it. What they *do* emphasise is that it would be misleading to make sweeping statements about students' use of technologies for learning even more than for living. In technology-rich networked environments students are ubiquitously using networked technologies for living and for informal learning purposes (Canole et al., 2006; Khalid et al., 2012; Ryberg & Ryberg Larsen, 2012; Dalsgaard, 2014). However, despite the pervasiveness and integration of networked technologies in all aspects of 'living' lives, not all students are readily transferring this activeness using networked technologies to the formal learning setting (Corrin, Bennett & Lockyer, 2010; Jones & Healing, 2010; Cutajar, 2011a; Deng & Tavares, 2013). There are research reports that students prefer to keep their online formal learning life separate from their social and informal learning life (Ramanau et al., 2010; Deng & Tavares, 2013). Students are reported to consider technologies an important aid to academic work (Deepwell & Malik, 2008). Students are also reported as having mixed feelings about the use of technologies within the learning setting (Ryberg & Ryberg Larsen, 2012). This unfolding situation raises questions on what variation exists in students' experiencing of networked technologies for learning in the formal learning setting. Of interest as well is the finding that students want to keep the instructor away from their online informal learning spaces (Deng & Tavares, 2013), though from personal experience I find that when it is advantageous for them students go in the opposite direction on their own initiative. Furthermore, the situation where students use networked technologies to seek each other for learning in the informal online environment (Dalsgaard, 2014; Deng & Tavares, 2013; Lapointe & Reisetter, 2008) and at times simultaneously hold back in the course setting (Deng & Tavares, 2013; Lapointe & Reisetter, 2008) prompts questions on the students' views of other students as well as teachers as contributors for their learning.

2.2.2 Students' experiences as contrasts and conflicts

Within the formal learning setting, students are reported to be against a whole lot of internetworking technologies (Nicolajsen, 2014; Ryberg & Ryberg Larsen, 2012). Researchers report that students prefer a limited selection of technologies with which they feel comfortable (Ryberg & Ryberg Larsen, 2012). Students are also reported to have no computing skills deficit (Deepwell & Malik, 2008), yet are reported to lack IT skills (Oliver, 2008), or worry about digital competence (Goodyear, Jones, Asensio, Hodgson & Steeples, 2005; Busuttil, 2005). Recently Ryberg & Ryberg Larsen (2012) reported students as fearing the addiction potential of technologies as well. The emerging picture of the students' use of networked technologies in the formal learning setting is one of "Diversity and Ambivalence" (Ryberg & Ryberg Larsen, 2012). Different students are found to look differently at the use of networked technologies in the formal learning setting apparently dependent on their past experience and present situation: "The space of what we can possibly see is to be found in the very intersection of the past and the present" (Bowden & Marton, 1998, p.76).

The holistic descriptions I generated by my research incorporate an alternative way of explaining what emerges from the published literature as contrasting and conflicting views held by students on the use of networked technologies in the formal learning environment. Although in my research I do not narrow down my focus specifically on the detailed students' views of the use of networked technologies, the holistic account of the students' lived experiences of NL I present provides an alternative perspective for understanding this. One of the two descriptions I generated from students' accounts embodies implied digital literacy (Voogt, Erstad, Dede & Mishra, 2013; Littlejohn, Beetham & McGill, 2012) but this is proposed as one of the critical dimensions shaping the student's experience.

2.2.3 Motivation and engagement

Some students are found to appreciate the opportunity to self-direct their own studies (Deepwell & Malik, 2008; Shea & Bidjerano, 2010; Nicolajsen, 2014) as required by NL, but others are concerned by increased responsibility to self-

manage personal learning activities spreading out across time (Nicolajsen, 2014). Golladay, Prybutok & Huff (2000) found that in its activation NL demands of the student a significant amount of discipline and self-motivation to take control of their own learning. Recently, quantitative research led Shea & Bidjerano (2010) to conclude that self-regulation was a core student characteristic affecting experience. To note the criticality of this issue in passing I draw attention to their suggestion for self-regulation to be added to the three presences – social, cognitive and teacher – of the community of inquiry (COI) framework.

Focusing on the learning content, Oliver (2008) concluded that the student's experience is impacted by the perceived difficulty and relevance of set problems and the amount of information students generate as a collective. He claims that both small and large amounts had a negative influence on the student's learning. As Prosser & Trigwell (1999) argued, students' prior knowledge and what is evoked of it by the present situation impacts on the quality of the learning that takes place.

Research findings led Gibbings, Lidstone & Bruce (2010) to conclude that age did not impact on students' online learning experience, but the only attribute which appeared to be significantly influential was the interaction with the tutor. From their study, Lipnevich and Smith (2009) concluded that grades were not so influential on students' learning activity. Nicolajsen (2014) also speculates that the online 'social experiment' might still have taken off without the enforcement measures, while on grades and participation several other researchers report otherwise (Cutajar & Zenios, 2012; Harnisch & Taylor-Murison, 2011; Drexler, 2010).

Nicolajsen (2014) also reports that the online medium served as a showcase for some of her students, adding, however, that some students did not appreciate it much. This finding brings up the important question of identity and the presentation of self in the online learning setting as highlighted by other researchers (Rolè, 2014; Krüger, 2006). Individual students emerge as having different motivations and are triggered differently to learning activity and engagement for learning. Individual students' traits are seen emerging as a

complex assemblage of their own influencing the student's experience. This picture is observed becoming even more complex with inter-human interactivity.

2.2.4 Human-human interactivity

Through the past decade research studies continued to depict a complex picture of contrasts and conflicts beyond those reported by Sharpe, Benfield, Lessner & Cicco (2005) a decade ago. Some students are found celebrating the NL experience while others are disappointed with this experience in whole or in part (Deng & Travers, 2013; Ozturk & Simsek, 2012; Biasutti, 2011; Mason, 2011; Bell, Zenios & Parchoma, 2010; Johnson, 2007; McConnell, 2006). Using action research to investigate HE practitioners' experience of NL, Levy (2006) identified four core processes to consider in relation to this learning experience – orientation, communication, socialisation and organisation. Expanding on the communication process she reports that some participants expressed positive feelings but others were frustrated with discontinuities, repetition, lack of engagement, and the shallowness of online discursive activities. In yet another UK-based post-graduate setting using an ethnographic stance, Krüger (2006) reported successful students as being highly self-regulated and goal oriented. Otherwise Krüger signals the supporting role of social interaction through which students also established their learning identity. In her commentary Krüger wrote about students' claims of a deeper, long-lasting learning experience, but she also drew attention to reported feelings of inadequacy, alienation and isolation impeding online participation. Bringing into the picture issues related to motivation and identity formation, Krüger's research added to the growing amount of research highlighting the importance of human relationships acting as a threshold to a potentially beneficial learning experience. Employing mixed-methods within a case-study approach to investigate graduate students' perceptions of online group processes, Koh et al. (2010) found that all six graduate students agreed to the value of online group-work for the co-construction of knowledge permitting them access to different perspectives. However, the researchers also reported complaints on the non-accountability,

and communication difficulties especially communication related to decision-making. Also using mixed methods, Lapointe & Reisetter (2008) found that while some of their graduate participants experienced the virtual community as supportive of their learning, others found the connectivity with peers "superfluous and inconvenient, and not supportive of their online learning process" (p.641). The researchers also differentiated between students who strongly valued the online discursive activities as a means for learning, and a larger group of students who valued the online learning attitude in as much as it provided learning flexibility but still did not find much learning value in it. In passing I draw attention to Lapointe & Reisetter's (2008) observation that students created their own learning groups outside the formal learning setting, hence identifying course design and tutoring as significantly impacting students' views of learning online in communication with others. I also draw attention to Bradley & McConnell's (2008) report that group-work was a very loose and haphazard affair for their heterogenous group of participants ranging in age from eighteen to post-retirement. Bradley & McConnell report individualism rather than an online learning community.

Such research findings illuminate the experience of human-human interactivities proposed by NL as a considerable challenge for some or many students. In her interpretative stance to investigating undergraduate students' experiences using Web 2.0 tools for learning Nicolajsen (2014) recently used the framework developed by Glud, Buus, Ryberg, Georgson & Davisen (2010) for identifying "central tensions" in using Web 2.0 technologies in the learning setting. Using this theoretical conceptualisation delineating four dimensions of control, namely, motivation, resources, infrastructure and the learning process, Nicolajsen (2014) goes a long way in describing students' lived experience. She concludes that the picture remains one of contrasts and dissonance. She reports that her students are "challenged" by the experience. Some students were found to appreciate student-student connectivity for accumulating content and to deepen understanding but others claimed the collaborations too demanding to cope with (Nicolajsen, 2014). Nicolajsen also reports that while some students appreciated

this inter-student communication as a means to get to know about other students' knowledge and interest for possibly extending connectivity beyond the formal learning course others doubted the quality of student-generated content. Nicolajsen (2014) underlines students' reliance on the tutor for information and guidance on what to do and how despite ubiquitous media and flexibility.

With regards to the teacher's view, studies also report some students to be worried about reduced interactions with tutors (McConnell, 1998; Busuttil, 2005; Deepwell & Malik, 2008; Nicolajsen, 2014). Web Boyd (2008) even reports conflicting claims such as students agreeing that online learning increased their contact with tutors but at the same time disagreeing with the claim that online learning provides sufficient opportunities to interact with tutors. Researchers highlight the importance of tutoring (Harnisch & Taylor-Murison, 2012; Johnson, 2008; Levy, 2006) and at the same time underscore the importance of self-regulation (Nicolajsen 2014; Shea & Bidjerano, 2010; Deepwell & Malik, 2008). These contrasts and contradictions in the extant literature even in how the student views teachers and students as players for learning, prompted me to take a closer look. Goodyear & Ellis (2010) discuss the teachers' shifting roles. Meanwhile I sought to understand shifting roles of both teachers and students from the student's standpoint and from their own accounts. This effort is reflected in my answer to the second research question I set myself regarding the students' perceptions of teachers and students as contributors for their NL experiencing; which learning approach continues to emerge as a controversial issue among students.

2.3 The shifted pedagogical approach

As a pedagogical approach NL is a considerable shift from prevalent traditional teacher-oriented approaches (McConnell et al., 2012). As opposed to transmissive teaching approaches, NL demands students' active participation (Goodyear, 2002). It incorporates a *social* understanding of learning and simultaneously an understanding of learning as an individual cognitive accomplishment (Jones & Steeples, 2002; Goodyear, 2002). Learning is sought

“through participation in communities of learners where meaning is both negotiated and created through collaborative dialogue”, hence rendering knowledge a co-construction among participating members of the learning group (Hodgson et al., 2012, p.293) rather than knowledge as some esoteric good accessible only through privileged disseminators. As Goodyear et al. (2010) reasonably remark, “There is no point to networked learning if you do not value learning through co-operation, collaboration, dialog, and/or participation in a community” (p.2). In its deepest sense, engaging in NL means a concern and responsibility for others’ learning as well as personal learning (McConnell, 2000) within a learning setting which exhibits democratic processes, diversity, inclusion and e-quality (Ryberg et al., 2012). The responsibility for learning falls on everyone not only on the teacher (Hodgson et al., 2012). The engagement of the student with learning materials for learning is recognised, but particular consideration is also given to the inter-human interactions for learning (Goodyear et al., 2010).

NL and the implied engagement with learning materials and human others for learning mediated by technologies raises a number of challenges. When students are used to face-to-face classroom meetings with a lot of teacher direction, the idea of being thrown in at the deep end to do their own thing and develop an independent mind in a presumed democratic, inclusive and communal way may be experienced as challenging, confusing and difficult to cope with depending on other previous and present learning and life experiences, as repeatedly evidenced by the growing body of published literature. As Bowden & Marton (1998) put it, “We act and react to a situation as we see it and the way we see it decides how we act” (p.7).

In practice the NL pedagogical approach does not add up to some set of instructions which can be simply followed to the letter for accomplishing learning, whatever this may mean. Whereas the traditional classroom-based transmissive approaches encourage students to remain “shadowy and insubstantial figures” (Hounsell, 1997, p.238) in their assumed passive role, in the NL setting learners’ activeness seeking relations for learning forms the basis of the learning

experience by definition. If we accept the premise that our present situation and what meaning we give to it is related to our previous experience and surroundings in what we discern of it (Bowden & Marton, 1998), we cannot but expect contrasts and conflicts when we put the students' lived experiences of NL under the research lens. In my answer to the first research question I went beyond reconfirming contrasts and conflicts. By my first research question I directed my research effort at finding a way of understanding them. From students' accounts I generated a description of the different possible ways the student experiences NL in whole and in parts explaining contrasts and conflicts rather than verifying them in the post-compulsory pre-university educational setting.

2.3.1 NL as a relational learning ideal

In its disruption NL is signalled as a relational pedagogical approach (Jones, 2004) emphasising the connections between learners, learners and tutors, and the learning community and its resources (McConnell et al., 2012). This conceptualisation goes beyond connectedness between the teacher, the student, and the content (Garrison & Anderson, 2003). Jones (2004) argues for the use of the 'network' metaphor for theorising NL in acknowledgement of the influence of culture and power on an evolving learning situation. In this way Jones (2004) permits the incorporation of such notions as 'joint enterprise', 'mutual engagement' and 'shared repertoire' associated with communities of practice (Wenger, 1998) simultaneously sanctioning the existence of subgroups arising from divergent preferences, interests and power relations (Hodgson & Reynolds, 2005). Elaborating on the network metaphor Jones (2004) loosely draws on mathematical network theory to draw attention to the importance of 'strong' and 'weak' ties: Strong ties sustain the close knit relationships of participants in a learning network facilitating knowledge creation while weak ties extend and augment knowledge sharing and creation bringing in to the learning network alternative perspectives and counter arguments (Jones et al., 2008). In its

relational stance NL is no ‘heterotopia’ for learning but theoretically it is advanced as providing a framework for it.

2.3.2 The unpredictability of NL experiencing

Despite all the ideology the extant literature continues to reveal that when it comes to practice a NL course experience may not progress as intended (Dillenbourg, 1999; Goodyear, 2002; Goodyear & Carvalho, 2014). Since it involves human relations NL is not free from the possibilities of conformity, division, exclusion (Reynolds & Trehan, 2003), conflict (Ozturk & Simsek, 2012), oppression and suppression (Ferreday & Hodgson, 2008, 2010). In NL, the inter-human interactions which, in expectation of the development of an online learning community, are considered to be “the vehicle through which learning occurs in the online course” (Palloff & Pratt, 2007, p.13) may be experienced as tyrannical (Ferreday & Hodgson, 2008). Trehan & Reynolds (2002) maintain that “All groups develop norms and establish a dynamic of influence & hierarchy which will be in tension with any attempts towards equality” (p.289). Ferreday & Hodgson (2008) suggest opportunities for critical reflexivity to permit students to see things differently and act differently.

2.3.3 Changed human roles

Within the online learning community teachers and students roles are not clear-cut as in a traditional learning environment (Trehan & Reynolds, 2002). In NL environments, at times, the act of teaching may be taken up by a student or a number of students (Palloff & Pratt, 2008). Here I refer back to the picture of contrasts and conflicts as evidenced by the developing research base on students’ lived experiences, even the students’ views of teachers and students in relation to them for learning, as I sought to map out in the first section of this chapter. This contentious issue of changed human roles led me to my second research question, thus also directing my research effort at finding a way to understand students’ perceptions of human others rather than confirming dissonance.

As McConnell (1998) emphasised in view of the whole online learning experience, different students' lived experiences should not be positively or negatively judged: "they are equivalent and worthwhile experiences which indicate the need to be inclusive of alternative ways of working in these online environments" (p.viii). This appeal gains further significance when we recognise that students come to the online learning experience with their own baggage. That is, what they make out of a situation is dependent on what different aspects they discern as "values in dimensions of variations originating from our previous experiences" (Bowden & Marton, 1998, p.36).

2.4 The holistic viewpoint

The emerging picture of contrasts and conflicts makes sense when acknowledging that the meaning students give to the learning experience "is a function of what it is related to, or the dimensions of variation through which it can be seen" (Bowden & Marton, 1998, p.36). As aforementioned, in my research work this prompted me to get behind the observed 'diversity and ambivalence'. In doing so I sought a 'holistic account' of the students' lived experiences in my attempt to describe the bigger picture embodying this complexity (Creswell, 2014).

A number of researchers from the Australian context are observed stepping outside the web of contrasts and conflicts in individual students' lived experiences to explore students' learning experiences using face-to-face discussion extended into the online medium (Barrett, Higa & Ellis, 2012; Bliuc, Ellis, Goodyear & Piggott, 2011; Ellis, Goodyear, Calvo & Prosser, 2008; Ellis, Goodyear, Prosser & O'Hara, 2006). Interestingly, with studies spanning across a number of universities and different subject areas including humanities, business, technology and science subjects, they repeatedly demonstrated that variation in how students conceptualise and approach learning with others in combined dialogic face-to-face and online environments is related to deep and surface learning approach hierarchies and fragmented learning versus coercive learning mind-sets. In the Taiwanese context, this research strand was recently extended

to cut across compulsory school settings with the exploration of students' perceptions of web-based learning as well (Tsai, 2009; Tsai, Tsai & Hwang, 2011). This Australian-Asian set of studies combining quantitative methods and phenomenography advance a somewhat holistic view to make sense of the complex picture of the students' experiences of learning using networked technologies. With my research exploring Maltese post-compulsory pre-university students' experiencing of learning using networked technologies I join this camp, although in my work I remain committed to interpretation.

To gain an understanding of the student's experience of using networked technologies for learning beyond contrasts and conflicts I found it necessary to go beyond the generation of a hierarchy of qualitatively different conceptualisations and approaches even if these are configured as increasingly elaborated. To transcend contrasts and conflicts I found it necessary to go further, requiring a constitutive configuration of expanding awareness. Thus I advanced an understanding of the student's lived experience of learning using networked technologies not as a good or a bad experience, or as complex compositions of contrasts and conflicts, but as a chaotic learning ecology (Mason & Rennie, 2008; Ellis & Goodyear, 2010) wherein order is recognised in the coming together of critical dimensions of expanding awareness (Åkerlind, 2005b) and an individual student's view arising from the set focuses denoting a particular instance of awareness within an inclusive hierarchical frame.

2.4.1 The argument for a holistic constitutive view

Despite all the NL idealism, in practice the students' experiences of NL emerge as a diversity of different lived experiences, contrasting views and dissonance. Recently Goodyear & Carvalho (2014) emphasised that "things, tasks and people are coming together in complex assemblages". Relationships among the constituent parts do not evolve by any particular affordance or potential of the separate entities but in terms of the constructed relation as a whole (Goodyear & Carvalho, 2014). This theoretical framing of NL design underscores not only the collective as a "complex assemblage" but also each individual student's NL

experiencing as a situation of “complex assemblage”. Following on such cues, I argue for an alternative perspective to gain understanding of the complexity of the students’ experiences. In my argument I suggest going behind this complex picture. I argue for a holistic approach which incites a constitutive view of the student’s experience away from notions of good and bad, and the picture of increasing elaborations, although the latter already goes some way in transcending contrasts and conflicts. Different students experience a learning situation differently (Prosser & Trigwell, 1999) depending on how they figure it out from their own standpoint (Bowden & Marton, 1998). This argument led me to the phenomenographic approach directing my research effort at gaining an understanding of the ‘complex assemblage’ of the students’ experiences of online learning using networked technologies from their stand-point as a constitution of expanding awareness (Marton & Booth, 1997, Åkerlind, 2005b). Broadening my view even beyond the research enterprise, I now see this research attitude as being in a better constructive alignment to the NL pedagogical approach (Cutajar, 2014).

2.5 Conclusion

In this chapter I examined the existing body of collective knowledge on the students’ experiences of learning using networked technologies. Beyond the abundance of literature on students’ use of technologies for learning and for living – in general driven by Prensky’s (2001) provocative claim distinguishing between digital natives and digital immigrants – the literature continues to paint the picture of contrasts and conflicts Sharpe et al. (2005) reported almost ten years ago. In the qualitative research realm some work advancing a holistic approach and rising above contrasts and conflicts is observed, but generally this is concentrated in similar Australian-Asian undergraduate contexts and stops at the configuration of the hierarchy of less elaborated to more elaborated ways of conceptualizing and approaching a dialogic form of blended or web-based learning. I consider this work as significant in its suggestion of a holistic approach for contemplating students’ experiences.

In my research work I acknowledged the need to stay away from dichotomies but more than this I recognised the need to get behind the painting of contrasts and conflicts. Picking up on the holistic viewpoint I developed this idea further to arrive at a description of variation in the student's experience through the collective of students' accounts as an emergent progression of expanding awareness.

Chapter 3: **Framing the Student's Experience**

3.1 Introduction

Through my research I wanted to gain an understanding of the student's lived experience of learning using networked technologies. I wanted to find a way of transcending the contrasts and conflicts of students' lived experiences which the research continues to reveal to us. As I mentioned at the end of chapter 2, I wanted to arrive at a holistic account of the student's experience of NL, away from dichotomous judgements of good and bad experiencing. Phenomenography arose as a well-suited research approach matching up such higher order research aims. Åkerlind (2005a) declares that:

> "Phenomenography provides a way of looking at collective human experience of phenomena holistically, despite the fact that the same phenomena may be perceived differently by different people under different circumstances" (p.116).

It is in view of this "core premise" that different ways of experiencing are logically related to each other by the commonality of the phenomenon (Marton & Booth, 1997; Bowden 2005; Åkerlind, 2005a) that phenomenography provided me with a way to rise above contrasts and conflicts. At best, one way of experiencing is considered as more powerful than another. There is no wrong or right way of experiencing, only more or less elaborate ways of experiencing which logically form an open inclusive hierarchy (Marton & Booth, 1997).

I divide the chapter in two sections. In the first section I elaborate on how, by its philosophical underpinnings, the phenomenographic approach fulfilled the requirements of my higher order research aims. In this section I also draw attention to some of the main criticism directed at the phenomenographic strategy.

In the second section I outline the theoretical framework for understanding experience which I used for grounding the research at hand. In passing I note that although phenomenography is distinct from phenomenology (Marton, 1986;

Marton & Booth, 1997) its theoretical base draws on phenomenological propositions including Brentano's principle of intentionality, Gurwitsch's theory of awareness, and the Husserlian notion of 'appresentation'. In making sense of the phenomenographic theoretical base, I consider these three theoretical perspectives, their contribution in developing the distinctive theoretical features for doing phenomenography, and how these different theoretical perspectives, both separately and together frame my research enterprise.

3.2 Phenomenography matching Research Aims

Phenomenography is a qualitative research approach (Trigwell, 2006; Alsop & Tompsett, 2006; Bowden, 2005) for uncovering patterns of variation (Marton, 1986; Marton & Booth, 1997) in a person-world relationship (Bowden, 2005). It arose as matching my research aims going beyond uncovering contrasts and conflicts in my investigation of the Maltese post-compulsory pre-university students' experiences of NL to describe variation in the students' *experiencing* of NL from *the students' standpoint*. In an introductory text, Marton (1986) advanced phenomenography as

> "a research method for mapping the qualitatively different ways in which people experience, conceptualize, perceive, and understand various aspects of, and phenomena in, the world around them" (p.31).

When the theoretical underpinnings were explicitly laid down (Åkerlind, 2005a) phenomenography gained more acceptance as a research approach for mapping out the different ways a given phenomenon is experienced, or variation in awareness of it (Åkerlind, 2005a).

3.2.1 Avoiding dualisms

Sidestepping ontological enquiry which poses questions on the existence of objective reality, phenomenography is a non-dualist research strategy (Marton & Booth, 1997; Bowden 2005). Considering that nowadays I am convinced of uncertainty as I mentioned in chapter 1, I found this characteristic of phenomenography a welcome break from ontological questions that I cannot

answer. In phenomenographic terms, knowledge is neither considered to come from within an individual nor from without: “There is no dividing line between the inner and the outer worlds ... There are not two worlds with one held to explain the other” (Bowden, 2005, p.12). This means that phenomenographic research focus rests on the relationship between the research participants and the study phenomenon (Bowden, 2005). In the context of my research this consists of the relation between Maltese post-compulsory pre-university students and the NL approach. This relationship is represented by the lived experience of the phenomenon. The different ways of experiencing a phenomenon as arising across and within the collective of research participants are logically assumed to be linked by the commonality of the study phenomenon (Marton & Booth, 1997; Bowden, 2005; Åkerlind, 2005a). In my research I adhere to this assumption. I explicitly declare this because this assumption is not universally assumed in doing phenomenography. For instance, Laurillard (2002) declares that in doing phenomenography she assumes that the different conceptualisations of a phenomenon emerging from participants’ accounts relate to the students’ previous experiences and *not to each other*. In my research it was precisely this assumption which permitted me to transcend contrasts and conflicts which studies focusing on individual students continue to portray. The assumption that different ways of experiencing are related by the common phenomenon logically implies that different ways of experiencing form a structured set (Åkerlind, 2005b), and inclusive hierarchy, with more elaborated ways of experiencing incorporating the less elaborated ones (Marton & Booth, 1997). Thus, the different ways of experiencing a phenomenon form an emergent constitution of expanding awareness as I seek to clarify by the theoretical framework I map out in the next section of this chapter.

3.2.2 Second-order stance

Phenomenography is also identified as a second-order approach (Marton, 1986; Marton & Booth, 1997). It is claimed to be second-order in the sense that it tries to investigate person-world relationships from the other persons’ point of view:

> "At the root of phenomenography lies an interest in describing the phenomena in the world as others see them, and in revealing and describing the variation therein, especially in an educational context" (Marton & Booth, 1997, p.111).

Hence phenomenography suited my intent of investigating the student's experience from the *students' standpoint*. This second-order stance also permitted me to avoid judging students' NL experiences as positive or negative. In doing phenomenography there is no right or wrong way of experiencing, understanding, conceptualising or perceiving – even if this attitude is challenged by Webb (1997) – but only the relative impartiality of it (Marton & Booth, 1997). Describing the relation between the person and the phenomenon from the point of view of *the other* implies a non-judgmental attitude (Marton, 1986). Different ways of experiencing are sought, but at best one way of experiencing is recognised as more powerful than another (Marton & Booth, 1997).

3.2.3 Relational perspective

Figure 3.1 is an adaptation of Bowden's (2005) representation illustrating relationships in doing phenomenography.[3] With reference to his graphical illustration Bowden points out that "the focus of the research is on the researcher trying to find out about the object of study which is the relation between the subjects and the phenomenon" (p. 12).

In this adaptation I modified Bowden's (2005) representation to incorporate the research outcome and how this relates to the component elements of the research *by way of the researcher in relation to the participants' accounts*. I also use the term 'participants' rather than 'subjects' to acknowledge that volunteering students are *part* of the research (like the researcher). By means of this extended representation I seek to emphasise the positioning of the researcher as *a mediating agent* between the research outcome and the targeted person-world relationship reflected in the participants' accounts. That is, in doing phenomenography I acknowledge that as a researcher I can only do my best to

[3] Appendix A5 shows a copy of permission granted

approximate the second-order stance by "bracketing or setting aside prior assumptions about the nature of the thing being studied" (Ashworth & Lucas, 2000, p.418).

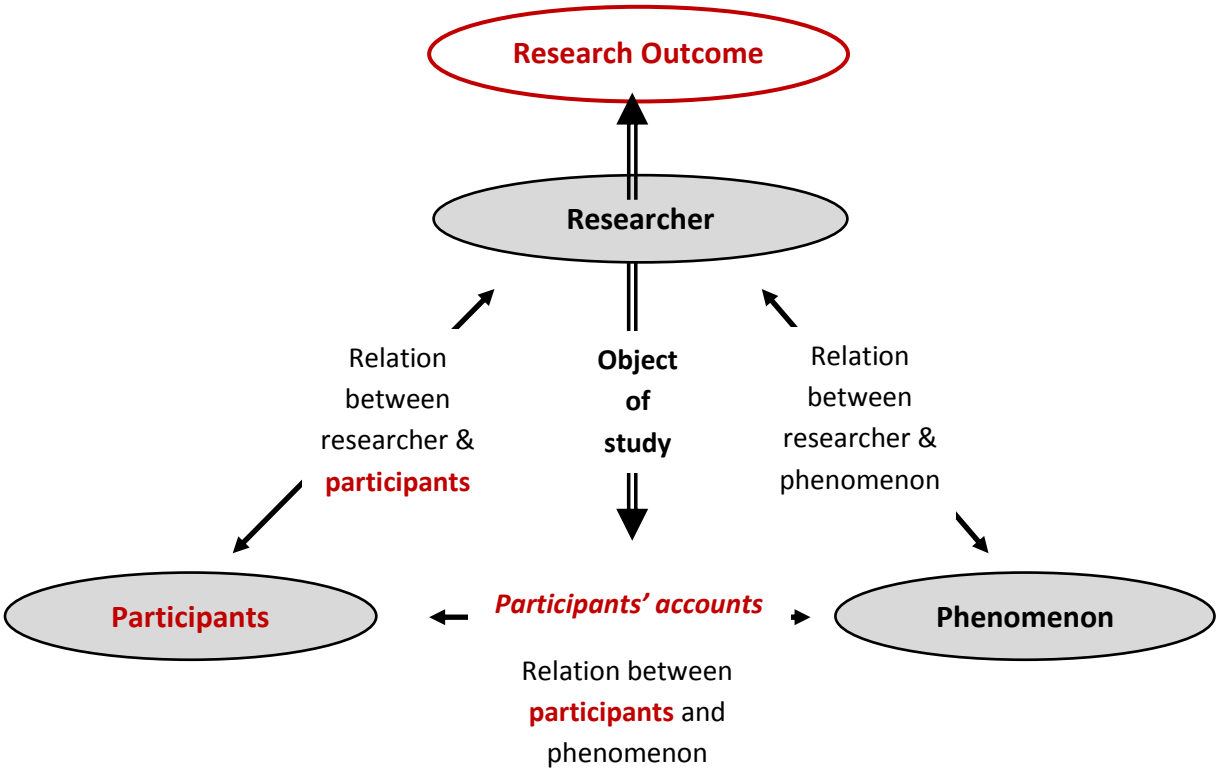


Figure 3.1: Phenomenographic relationality adapted with permission from Bowden (2005)

Figure 3.1 also highlights phenomenography as a *relational* approach wherein the researcher seeks to draw out knowledge from person-world relationships or manifestations thereof. That is, in doing phenomenography I cannot directly access the participants-phenomenon relation, but only what is reflected of it in their accounts. It is here pertinent to point out that Bowden & Green (2010) also adapt Bowden's (2005) visualisation of phenomenographic relationality acknowledging participants as "The researched" rather than "subjects".

3.2.4 Criticism of the phenomenographic approach

Ashworth & Greasley (2009) maintain that phenomenography fails to capture the participants' experiencing of a phenomenon because it does not take into

account the embeddedness of that meaning in a person's life-world. Ashworth & Greasley (2009) insist that phenomenography "detaches the person from their world" (p.564). They stress that the focus is kept on "mental orientation (noesis) and neglect the person's view of the material to be learned (noema)" (p.572). However, this argument conveys a dualistic attitude separating the 'psychological' from the 'physical' (Marton & Booth, 1997), which contradicts the non-dualist positioning of phenomenography as I sought to clarify above. In my research the non-dualistic ontological positioning was a key to rise above contrasts and conflicts (Marton, 1986; Marton & Booth, 1997; Bowden, 2005) and move away from descriptions focusing on the "psychological acts and structures associated with the experience" and descriptions of the phenomenon relegating the experiencer to "a generalised being of no intrinsic interest" (p.122). To transcend contrasts and conflicts, in my research I focused on the relationship between the student and the NL approach – hence assuming a non-dualistic attitude – and sought a description of how this relationship may vary across a collective of students at a given moment in time and over time, rather than a description of how the relationship between the student and the NL pedagogical approach is established, and what builds it and destroys it. Phenomenography is also criticised for unproblematically assuming that the data generated by way of the participants constitutes direct access to the relationship between the phenomenon and the participants (Säljö, 1997). Säljö challenges the assumption that what is communicated by the participant, say during an interview, gives access to the relationship between the participant and the study phenomenon. He cautions that "we have access to nothing but what the people communicate (or what they do)" (p.178). On the interview as a data generator, or "talk as data", Säljö (1997) explains that what is talked about as experience of a phenomenon or a situation during an interview may be "an account borrowed from stories that other people have been telling before me (and I use in innovative and unique combinations)" (p.184). Biggs (2011) also warns that interviewees may focus their effort on telling the interviewer what they think that the interviewer wants to hear. All this does not mean that generally participants are not truthful and

accurate in their accounts, but it does mean that participants' accounts need to be considered as partial and not complete descriptions of participants' experiences. This is why even in my research I address students' accounts rather than the student-phenomenon relationship. This is one of the reasons why I also found it necessary to modify Bowden's (2005) representation of phenomenographic relationality presented in Figure 3.1.

Säljö (1997) also points out that unless the interview is "studied in situated practice", there is the risk that the interviewer fails to see what the participants meant by their disclosures. He targets the data analysis process which separates what is said by the participants from the context in which it is said. One way of going about analysing data phenomenographically is to extract utterances of interest from the original transcripts, and subsequently devise categories from the generated pool of selected quotes (Marton, 1986; Marton & Booth, 1997; Booth & Hultèn 2003). Although Marton (1986) stresses the need to interpret utterances according to the embedding context and Åkerlind (2005a) highlights the practical gain of this procedure for the management of a substantial data collective, both Bowden (2000) and Säljö (1997) are critical of it. They both refer to the high risk there exists for this exercise to degenerate into abstraction. In recognition of this risk, in my research I chose an alternative strategy referring to the whole transcripts throughout the process of data analysis (Bowden, 2005; Åkerlind, 2005b).

Webb (1997) also raises the issue of "'prejudices' of phenomenographers" (p.200). The need to bracket pre-suppositions to see the world from the student's standpoint is considered in detail by Ashworth & Lucas (2000). This is a problematic issue extending across all stages of the research and demanding careful attention (Bowden, 2005). It led me to another modification of Bowden's (2005) representation, which I advance in Figure 3.1: the researcher as standing between the research outcome and the relationship between the participants and the study phenomenon investigated. Through the research venture I found it important to foreground this source of concern and heed advice extended by experienced researchers (Ashworh & Lucas, 2000; Bowden, 2005; Åkerlind,

2005b). Therefore I found it important to stay as transparent as possible particularly because of the individual research nature of my work (Åkerlind, 2005b).

As qualitative researchers coming from other research camps to experience phenomenography in team research, both Barnacle (2005) and Cherry (2005) find the elegance and neatness of the outcome space a contentious issue. In response to their worries, Åkerlind, Bowden & Green (2005) underline the "research focus on constituting *key* aspects of *collective* experience, rather than the detail of individual experience" (p.77, added italics), added to the viewpoint that the different ways of experiencing as different relations between the collective of experiencers and the phenomenon are related by the common phenomenon. Åkerlind (2005b) elaborates that in doing phenomenography a researcher is not interested in mapping out all distinctions in all minute detail "but just those aspects that seem critical in distinguishing qualitatively different ways of experiencing" (p.72). She goes on to underscore that structural relationships can be drawn out only by an elevated viewpoint shutting out the finer details.

Pragmatically, in doing phenomenography it needs to be acknowledged that a researcher only has access to what is somehow disclosed by the research participants and that as situated within a context. In the phenomenographic research enterprise the researcher needs to work hard at permitting the participants' viewpoints to come through their accounts. In the interpretation of these accounts towards a research outcome the best a researcher can do is hold on to the second-order stance (in being non-judgemental) – referring to the raw data at all times during the research process so that the research outcome remains as much as possible closely anchored to the participants' accounts in the context (as they portray it) and within the context (that they portray) – and map out the research route in detail so that results may be read by the research audience with reference to the research setting as well, as I seek to do in the next chapter describing my experience doing phenomenography as a novice individual researcher.

3.3 The theoretical framework of experience

In my research I am concerned with variation in the student's lived experience of NL and aspects thereof, specifically including also the variation in the student's perceptions of teachers and students as contributors to learning in NL experience. In phenomenographic terms I focus on the relationship between the students and the NL pedagogical approach.

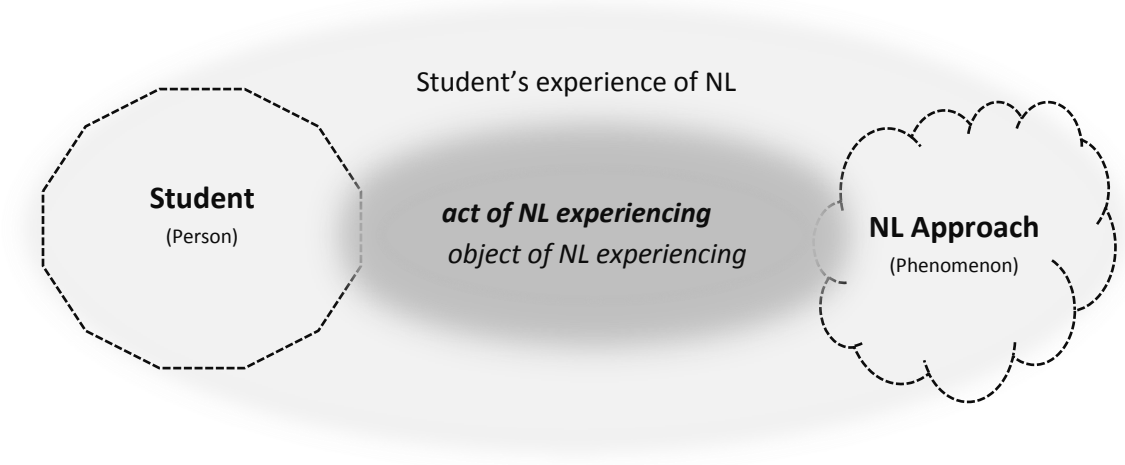


Figure 3.2: Experience as a relationship between person and phenomenon

Marton (1986) maintains that the relationship between person and phenomenon assumed when doing phenomenography is "a special case of the principle of intentionality" (p.40). The principle of intentionality refers to Brentano's premise that psychological action such as believing, learning, perceiving and understanding is directed at something (Jacquette, 2004). Experiencing entails the experiencing of something. The act of experiencing and the object of experiencing are inseparable. In Brentano's terms, what we do in experiencing and what is our intention (of the act) of experiencing cannot be separated from each other. We can only separate them in our analytical consideration by focusing on one or the other (Marton & Booth, 1997). By Figure 3.2 I sought to capture this conceptualisation of intentionality in this visualization of the lived experience of NL.

Recapping, the person-phenomenon relationship is premised to be a single indivisible constitution incorporating the act of relating to the phenomenon or the 'how', and the object or intention of relating to the phenomenon or the 'what' (Marton & Booth, 1997). In my phenomenographic research study I keep my focus narrowed down on the act of NL experiencing within this encompassing conceptualisation of the student's experience of NL, that is, the student's *experiencing* of NL.

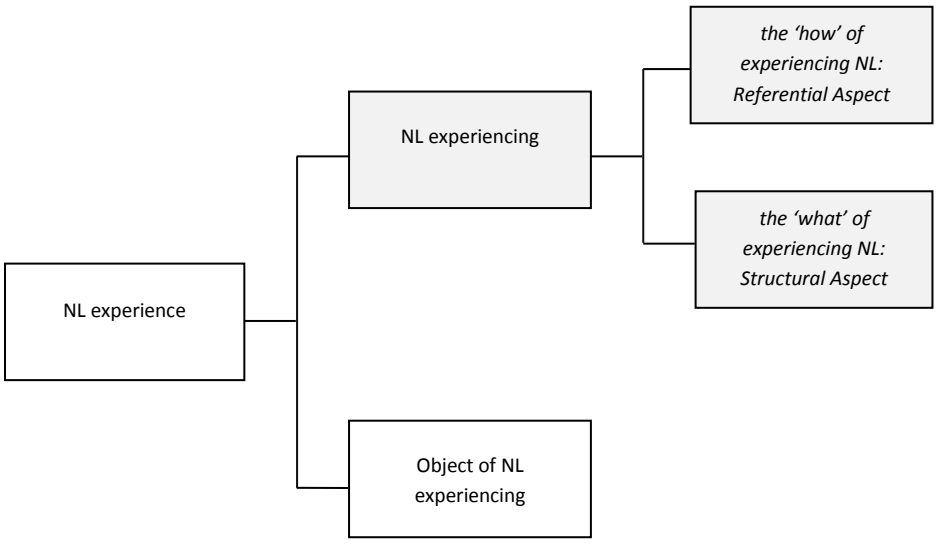


Figure 3.3: The analytical perspective of NL experience

The act of experiencing is also conceptually broken down into indivisible 'what' and 'how' aspects. The 'how' aspect is tied to the *meaning* given to the act of relating to the phenomenon, technically referred to as the 'referential' aspect. The 'what' aspect is tied to the *structure*, or the aspects of the phenomenon focused upon, technically referred to as the 'structural' aspect. Marton & Booth (1997) stress that these *referential* and *structural* perspectives again are analytical constructs which as such cannot be separated from each other. In Figure 3.3 I follow on from Marton & Booth (1997) to depict this theoretical framing of the whole person-world relationship which as actuated in my research maps into the student's experience of NL. In this figure I highlight my research focus that is the student's experienc*ing* of NL. Hence I am declaring that in my research I am

concerned with what the student focuses on and the meaning the student gives to the lived experience of NL, and I contemplate this in my work not on the basis of an individual student's account but on the basis of a collective of students' accounts incorporating a set of different possible ways of experiencing; likewise in my contemplation of the different ways the student perceives of human others as contributors to their NL experiencing.

3.3.1 Situatedness of experiencing

Importantly, it needs to be acknowledged that experiencing is necessarily situated in a context. As Marton & Booth (1997) repeatedly stress "We cannot experience anything without a context" (p.89) and "Our experiences of anything are always embedded in a context" (p.96).

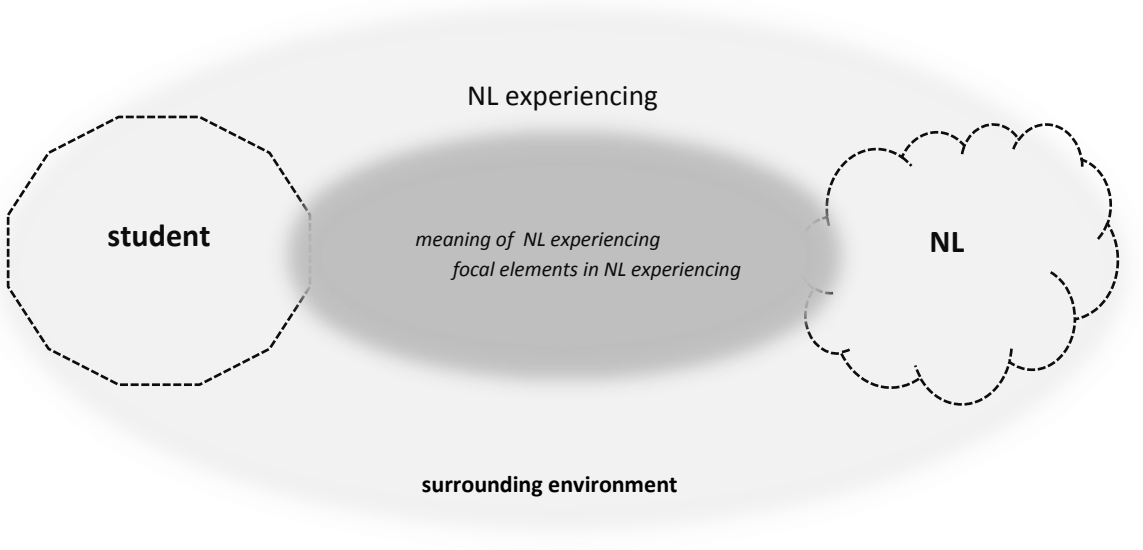


Figure 3.4: Conceptualisation of experiencing NL as a situated act

In Figure 3.4 I try to capture the notion of NL experiencing not only as a relation entailing referential and structural aspects as two inseparable analytical aspects (Marton & Booth, 1997) of the same person-phenomenon relationship, but also its situatedness as necessarily embedded within a context which embodies the surrounding environment. In my research, I acknowledge that the different

student participants experienced and understood the NL course experience within the context of their wider learning lives and other contexts of their living life.

3.3.2 Discernment in experiencing

Marton & Booth (1997) point out that “To experience something emanating from that environment is, for the first thing, to discern it from its context” (p. 86). In explication, Marton & Booth use the metaphor of a deer in the dark woods. They stress that “”A way of experiencing” is a way of discerning something from, and relating it to, a context” (p.112). With respect to my research, experiencing NL as NL implies to discern it from the surrounding environment within which it is embedded and relating it to this embedding context as well as other contexts. Moreover, Hultén & Booth (2002) explain that “The person/knower has an intention towards the phenomenon/known: he or she simultaneously distinguishes it from a background and sees within what is distinguished [as] certain aspects and relations between aspects” (p.2). From their contemplation of discernment Marton & Booth (1997) also affirm that “Structure presupposes meaning, and at the same time meaning presupposes structure” (p.87), hence emphasising the inseparability of structure and meaning in discerning the ‘figure’ from the ‘ground’.

3.3.3 Focusing on structure: awareness

In experiencing, the structural aspect is constituted of focal elements of the phenomenon which the experiencer discerns or is aware of at a given point in time. This notion of experiencing or awareness of certain elements suggests structure. From the phenomenological field, Gurwitsch’s (1964) theory of consciousness is drawn in as an expedient theoretical explanation of the structure of awareness (Marton, 1986; Marton & Booth, 1997). Gurwitsch distinguishes between the theme, the thematic field and the margin of awareness (Cope, 2000). The theme refers to those aspects of the phenomenon which are ‘thematised’ or the object of focal awareness. The theme is embedded in a thematic field which refers to those aspects of the surrounding context which are

related to the theme, and the margin which in turn refers to the complement of aspects of the surrounding context which are not related to the theme but which are still present in one's consciousness.

In Figure 3.5 I replicate Cope's (2000) diagrammatic interpretation to help visualise the structure of awareness.[4] Based on Gurwitsch's theory, at a given moment in time one is aware of certain aspects of the phenomenon. They are at the forefront of consciousness brought together to constitute one's present experiencing within a surrounding context. Simultaneously one is peripherally aware of other things as well in varying degrees and which relate to the theme in varying degrees.

The external horizon is taken as referring to the background against which aspects of the phenomenon are delimited (Bowden & Marton, 1998) and related back to that surrounding background and other backgrounds (Marton & Booth, 1997). The internal horizon points to the parts of the phenomenon which are discerned and related to each other to make the experiencing of the phenomenon a whole, against the surrounding background.

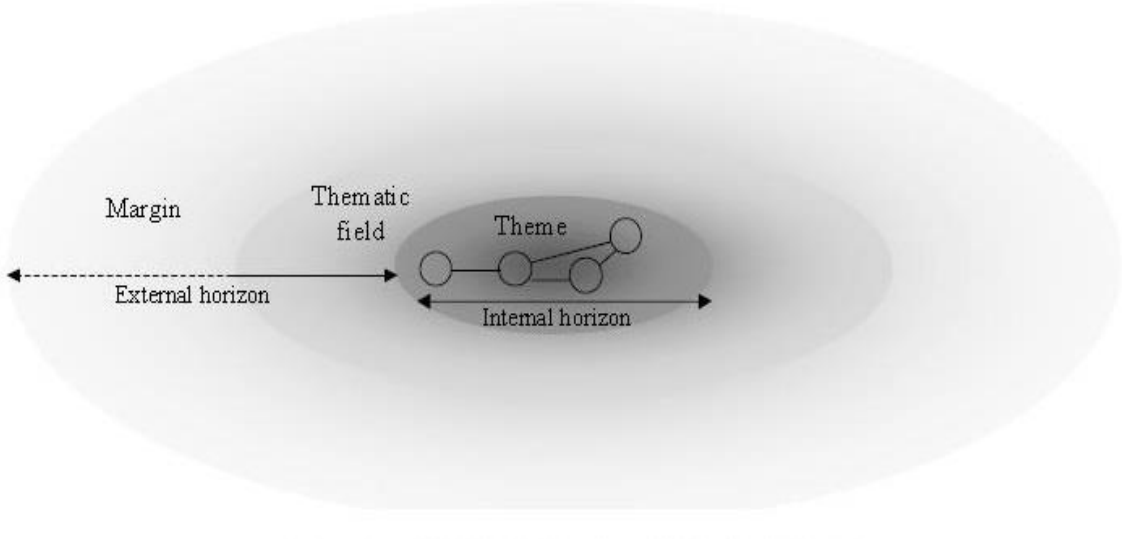


Figure 3.5: The structure of awareness as replicated with permission from Cope (2000)

[4] Appendix A6 shows a copy of permission granted

In relation to the present study, this means that a way of experiencing NL incorporates a number of aspects of the NL approach which are discerned and which in coming together give rise to a particular understanding of it. That is, for a distinct way of experiencing NL, the internal horizon incorporates those aspects of the NL approach which are discerned and brought together to bring about a particular meaning to the lived NL experience. The external horizon incorporates the surrounding context which in part, directly or indirectly, influences this experiencing – what aspects of the phenomenon are discerned and the meaning given in the coming together of the discerned aspects. For a given way of experiencing NL the thematic field includes contextual elements related to the theme, such as the student's past experience using technologies in the formal learning setting, the overarching teaching-learning attitudes at the contextualising educational institution, and the student's relationships with peers. Furthermore, this thematic field is enclosed within the margin consisting of the student's wider life experiences.

3.3.4 Focus on meaning: simultaneity and appresentation

Borrowing from the phenomenological field, Marton & Booth (1997) call attention to the fact that even if an entire object of concern is not visible, it is still 'appresented'. That is, even if not all of the aspects of the phenomenon are discerned it is still experienced as a whole. *Appresentation* refers to the Husserlian observation that humans experience more than what they are able to capture through the senses (Marton & Booth, 1997). In phenomenographical terms, Bowden & Marton (1998) define the term as "referring to the fact that in our experience of a part of something the experience of the whole is given" (p. 73). With regards to this "slightly distorted phenomenological terminology" Marton & Booth (1997) affirm that "although phenomena are, as a rule, only partially exposed to us, we do not experience the parts themselves, but we experience the wholes of which the parts are parts" (p.100). In discerning aspects of an object we experience it as a whole.

Bringing in the concept of appresentation to the context of my research implies that in simultaneously discerning a few or several structural elements of the NL approach, the student gives it meaning; hence a *whole* act of NL experiencing.

3.3.5 Different ways of experiencing

Fundamentally, variation in experiencing a phenomenon is explained in terms of the different aspects of the phenomenon which are at the forefront of one's awareness at a particular moment in time in a given situation within which the experience is embedded. Each different set of foregrounded aspects acting together gives rise to a different way of experiencing.

In consideration of different ways of experiencing related to each other by the common phenomenon of concern, it follows that different ways of experiencing are related to each other by way of an inclusive hierarchy reflecting the 'more specific' or the 'more elaborated' awareness, depending on greater or lesser aspects of the phenomenon which are simultaneously foregrounded (Marton & Booth, 1997).

Although theoretically this implies that there may be an infinite number of different ways of experiencing a phenomenon, empirical research repeatedly demonstrated that in practice this variation is finite (Marton & Booth, 1997; Bowden & Marton, 1998). Marton & Booth (1997) reason out that because the different ways of experiencing all relate to the experiencing of the same phenomenon, the variation "can be described in terms of a set of dimensions of variation" (p.108). These "dimensions of variation" are those critical aspects of the phenomenon whereby a particular way of experiencing can be understood as "*values* in those dimensions" (p.108, italics in original text). In clarification Åkerlind (2005c) prefers to refer to these aspects structuring the different ways of experiencing a phenomenon as "critical dimensions of expanding awareness". And, assuming that the ways of experiencing are finite, – as the empirical research continues to show as aforementioned – these are finite too.

In total, this means that mapping out the different ways of experiencing a phenomenon is all about revealing the assumed finite number of qualitatively

different ways of experiencing the particular phenomenon and simultaneously shedding light on the critical aspects structuring these different ways of experiencing the phenomenon which in expanding awareness lead to more powerful ways of experiencing the phenomenon. As aforementioned, Åkerlind (2005b) emphasises that in doing phenomenography one is after "those aspects [of the phenomenon] that seem critical in distinguishing qualitatively different ways of experiencing" (p.72) and not the detailed variations between one way of experiencing and another. Besides, considering that the resulting outcome space is a constitution arising from a finite set of participants' accounts, despite all the research indications, it is still necessarily open, necessarily a partial description of the total number of ways of experiencing the phenomenon in question.

3.3.6 Experiencing as a developmental progression of expanding awareness

Through this outline of the phenomenographic approach and the main theoretical conceptualisations framing the phenomenographic research enterprise, directly and indirectly I highlighted how phenomenography answers my research aims to gain an understanding of the different students' experiences, neither positive or negative nor as contrasting and conflicting with each other.

This outline of the phenomenographic perspective also clarifies the specific research objectives of this investigation: two descriptions (or "outcome spaces" in phenomenographic terminology); one describing the different ways in which the post-compulsory pre-university student may come to experience NL as reflected from the participating students' accounts; and another describing the different ways this student perceives teachers and other students as contributors for their learning in this NL experiencing, again as reflected from the participating students' accounts. Each description maps out a finite set of qualitatively different ways of experiencing (or perceiving) wherein each different way of experiencing (or perceiving) embodies a set of focuses with which is associated a distinct meaning. Additionally, in consideration of the commonality of the phenomenon (the NL approach in my case), the different ways of experiencing (or perceiving) are structurally related to each other by way of a finite number of critical

dimensions of expanding awareness, giving rise to what is personally envisaged as an emergent progression of expanding awareness of experiencing a phenomenon at a moment in time and over time.

In my effort to arrive at these specific research objectives, I found myself trying to do my best to assume the recommended non-dualistic second-order attitude. Ashworth & Lucas (2000) offer a list of practice guidelines for doing phenomenography especially for taking up the "epoché" or the "bracketing or setting aside prior assumptions about the nature of the thing being studied" (p.418). Bowden (2005) adds further "practice implications" guidelines to take into account the non-dualistic stance of the phenomenographic approach. In my research work I heeded this advice, particularly by making my research effort transparent, hence permitting the research audience to appraise the legitimacy of the research outcome as a constitution which somehow targets the relation between the participants and the phenomenon. This is what I seek to set about doing in the next chapter.

3.4 Conclusion

In this chapter I first laid down the two fundamental tenets of the phenomenographic research approach, which are the assumption of non-dualism and the second order standpoint. Throughout the chapter I highlighted the far-reaching implications of these two philosophical assumptions. I also directed attention towards the theoretical conceptualisations framing phenomenographic research. In my work I clarified that although phenomenography is a research approach in its own right (Marton & Booth, 1997; Åkerlind, 2005a), yet its theoretical base lies in the phenomenological realm. Nevertheless the resulting framework is a new theoretical configuration of the interpretative paradigm.

In the next chapter I outline and justify my research methods to investigate the qualitative differences in students' account of their NL experiencing. I will describe but one way of operationalising the phenomenographic conceptualisation framework I laid out in this chapter. I will also continue to elucidate the far-reaching implications of the philosophical underpinnings.

Chapter 4: **Phenomenographic action on Students' Accounts**

4.1 Introduction

In my research I set out to describe variation in the post-compulsory pre-university student's experiencing of NL, and moreover the variation in how the student perceives teachers and other students as contributors to learning in this NL experiencing. In this chapter I seek to outline the phenomenographic research methods I adopted in my effort towards these two target descriptions.

In the first section I map out the methods I used to generate data. In passing I draw attention to my preference for the term *generation* of data rather than *collection* of data in acknowledgement of the researched's participation and influence in this research process. In the second section I map out the methods I used to analyse this data towards my specific research objectives. In both these first two sections I start with an outline of the path I followed through the process of data generation and analysis before elaborating on some of the critical aspects of the process.

In the third section I discuss quality issues with regards to this research venture, particularly ethical conduct, reliability and validity. In my writing I use the traditional terms 'validity' and 'reliability', not because I do not recognise that criteria for appraising qualitative research such as this phenomenographic work are different from assessing quantitative enterprise (Åkerlind, 2005a; Sin, 2010), but because of my assumption of a broadened notion of terms, and to emphasise that qualitative research is not inferior to its quantitative counterpart, or that it escapes rigorous scrutiny (Morse, Barret, Mayan, Olson, & Spiers, 2002; Sin, 2010).

In doing research I observe that the effort to limit internal and external hazard spreads across the research process even beyond the processes of generating and analysing data. It is not an afterthought but an ongoing task through all stages of research development.

4.2 Data Generation: Interviewing the phenomenographic style

In my effort to generate data I interviewed thirty-five students who, in the year 2012 participated in the eight-week (plus two) NL online course. The first three interviews which served to pilot the planned interview questions and practice interviewing for phenomenographic purposes were discarded. Hence the main research incorporated thirty-two students' accounts in total.

The process of interviewing was taken up past the NL course experience at a time when students were attending the college on a daily basis and were not busy with high-stakes examinations. In part, the resultant time lapse between the NL course experience (March – May, 2012) and the data generation period (October 2012 – January 2013) was positively considered as 'a cool down period' hence convening the student participants to reflect more impassively on the earlier NL lived experience. However, some interviewees claimed that the experience was too far-off for them to recall it in the requested detail. My best laid plans were found primarily dependent on students' response to the research invitation. When towards the end of term time I had interviewed twenty-nine of the sixty-eight student cohort I sent a message via electronic mail to all cohort students inviting any remaining students who wished to relate their story (and who had not already done so) to contact me. Within days, a student whom I had missed interviewing earlier because of several impeding difficulties approached me. Subsequently, even as a result of my own effort when coming across students face-to-face, I conducted another five interviews.

4.2.1 The choice of data generation method

When still in the planning stages of my research project I faced the problem of which data generation method to choose for my investigation. My aim was to generate a collective of students' accounts for mapping out the different ways in which the post-compulsory, pre-university student may go about experiencing NL; and furthermore, the different ways in which the student may perceive teachers and others students in this experiencing. Consequently, I required the students to reflect on their lived experience.

In my research I contemplated written open-ended questions and the “common” interview (Walsh, 2000). Although the former strategy is less time-consuming and easier to organise and manage when the student population is congregating in groups through face-to-face classes several times a week, I considered the one-to-one interview a superior strategy because of the opportunity it gives to prompt participants to describe their experience in more detail and the possibility to clarify a participant’s interpretation at source where deemed necessary. In my contemplation about the data generation method to use, I also took into consideration the relatively young age of the participants and writing competence of some or many.

4.2.2 Finding the next interviewee

Appendix B2 tabulates the details of the sample of students I interviewed. In this tabulation I include explicit refusals and unfulfilled promises. Nine students refused to be interviewed and another four students verbally accepted but then never found the time for the promised interview. Apart from the demand on their time (Harnisch & Taylor-Murison, 2012; Biggs, 2011) some of these adolescent students were observed to be troubled by the prospect of an interview: irrespective of my prior effort to make my research aims clear, several students whom I approached for an interview were asking about the interview questions so that they could *prepare for them*, or apologetically declaring lack of preparation. On one occasion, at the start of the interview a participant pleaded “*Mhux se ssaqsini affarijiet tqal hux miss?*” [“You’re not going to ask me difficult questions are you, miss?’]. Evidently these students confused the object of the interview, and possibly felt the power differential despite my effort to dampen it.

As advised by Trigwell (2006) I deliberately aimed to maximise variation in the research sample to be accumulated. To do this I assumed that the experience of online learning was somehow related to student’s activeness online when on course. The tabulation in Appendix B2 sets out this spread. In drawing out the sample I also aimed for an even spread of students from the three groups, subdividing the intermediate computing student cohort into face-to-face classes. I

achieved this fairly well, as also recorded in Appendix B2. Even the pilot set included an even spread with a student from each of the three groups. A balanced sample in terms of gender was much harder to achieve because of the much higher incidence of male students choosing to study computing at post-secondary level. Despite the effort to bring in all the minority of potential female participants, the final set of thirty-two participants included seven females – a comparable percentage [28% (7/25)] to the actual study population [22% (15/68)]. At the beginning of the interviewing period I was concerned about finding the next student to interview. Beyond the twentieth interview the problem turned into a question of when to stop. Seasoned phenomenographers make their own recommendations (Bowden, 2005; Trigwell, 2006) but I still needed to be convinced. I found it difficult to quit because there was always the chance of further revelation in the next interview. On the other hand, I acknowledged the substantial amount of data that I was accumulating. Bowden (2005) emphasises the need to strike a balance between interview numbers ensuring 'sufficient' variation in the sample and keeping the amount of interview data down to a manageable size. In consideration of the number of interviews running less than thirty minutes and awareness that some interview parts had to be discarded because of unintended influence as an interviewer, I went up to thirty-two interviews before I convinced myself of having achieved a reasonable balance.

4.2.3 Interview design

Appendix B1 includes a copy of the English version of the planned semi-structured interview. In my study, the specific objectives of the interview were to encourage participants to talk about the NL experience they lived through earlier, to describe to me how they lived through this experience, and to think aloud on their perceptions of human others as contributors to their learning in this experience. Therefore, the interview was planned to give participants as much freedom as possible to take the conversation in whatever direction they wanted, because what an interviewee focuses upon reflects the aspects of the phenomenon discerned (Marton & Booth, 1997). What the interviewee chooses

not to talk about is as telling as what is talked about during an interview. As Marton (1986) advises and comments, the researcher asks the participants open-ended questions “in order to let the subjects choose the dimensions of the question they want to answer”, because what dimensions a subject chooses to focus on reveals “an aspect of the individual’s relevance structure” (p.42).

During one of the three trials it turned out that one of the participants had a problem to understand the meaning of the Maltese term “*gwadanjajt*” (gained). This instigated a minor amendment to the planned interview but otherwise the prompting questions were deemed to be achieving their intended objectives. Having an interview plan helped me to ensure that the interview with different interviewees always started with the same “opening scenario” and as much as possible incorporated the same minimal amount of interviewer input, this in consideration of the phenomenographic non-dualistic viewpoint (Bowden, 2005).

4.2.4 Interviewing venue

Working with relatively young student participants in a large crowded post-secondary college, the interview venue proved to be a dilemma, specifically choosing between a familiar computer laboratory with a high risk of disruption or an unfamiliar room allocation in an unfamiliar campus building. Most of the interviews necessarily took place in this latter room because of the busy lab schedules. I tried to play down the effect of unfamiliar premises by small talk on my shared unfamiliarity of the new building at times ending up touring it with the participant. On three separate occasions, when I started out with the interviews at the beginning of the academic year, the participating student turned up with a friend (or a group of friends) ‘to help him/her find the way’ even when we had agreed beforehand to meet at the entrance of the building. On these occasions it felt as if the volunteering student was more uneasy by the prospect of an interview than the question of venue. Nonetheless, the absolute majority of participating students relaxed and talked freely when the interview took off. The three out of the four times the participating student and I stayed in a supposedly empty computer laboratory we were interrupted by students and lecturers coming

in to use the workstations. Normally we managed to continue with our tête-a-tête but on one occasion the interview was terminated shortly after the interruption because the interview rapport could not be re-established. All said, even the allocated room was not without its problems: road-works and other sources of high-level noise nearby on two occasions rendered the interview recording in part inaudible or very difficult to transcribe.

4.2.5 Pilot interviewing

I conducted, transcribed and translated (from Maltese to English) three pilot interviews spread across a three-week period. Heeding Bowden's (2005) advice, these interviews served to check for any misalignment between the interview questions and the intended data set for answering my research questions, and to check on misalignment between my interviewing conduct in practice and the non-dualistic, second-order attitude I aspired to in doing phenomenography. As mentioned earlier the interview design was generally found to work well. The greater challenge was working on my misalignment. I had to learn to hold back from asking leading questions and simultaneously stop myself from a tendency to pursue 'what' questions in favour of 'why' and 'how' questions (Åkerlind, 2005a). Furthermore, I had to make a directed effort to shift from a judgemental standpoint to nurturing an empathic attitude (Ashworth & Lucas, 2000). To a fair degree I managed this shift by retaining my critical eye on *my own conduct* as an interviewer. In trying my best to *listen* to what students had to say, helped me in my struggle to become more of the phenomenographic interviewer I aspired to be.

4.2.6 The interviewing process: willingness, capability and power differential

The interview recordings ranged between fifteen and fifty minutes. Two of the three exceptionally short interviews were pilot interviews. Contrastingly, on a number of occasions, the conversation went on long after the participant declared that s/he had nothing else to say and the audio-recorder was switched off. On some occasions it so happened that when the recorder was switched off the

student was more disposed to talk freely even if normally I kept the recorder barely visible to minimalize its impeding effect. The longish encounters all reflect the participant's willingness to describe how s/he went about the online course and readiness to share thoughts about this experience. On willingness, Alsop & Tompsett (2012) remark that "Each account … includes as much information and detail, or as little, as the subject chooses" (p.246), thus emphasising the *dependency on the participants to generate data*. Still I also blame my own inexperience for the short interview instances. I consider the actual intensity and depth of the interview as dependent on the interviewer too, to convene "a therapeutic discourse inasmuch as the interviewer is trying to free the interviewee of hitherto unsuspected reflections" (Marton & Booth, p.130). In passing I note that Richardson (1999) draws attention to related political and ethical issues on these aspirations of phenomenographic interviewing. He underlines the considerable responsibility interviewers carry with them. Richardson recommends "a reflexive approach which takes into account the social relationship between researchers and their informants and the constructed nature of the research interview" (p. 70). Several researchers (Ireland, Tambyah, Neofa & Harding, 2009; Åkerlind, 2005c; Dortins, 2002) emphasise creating a relaxed atmosphere for achieving this state of "meta-awareness" even if in small ways it bends the strictness to limit interviewer input advised by Bowden (2005).

As abovementioned some participants were more willing to speak their mind than others. They were more outspoken, or maybe had better developed communicative skills. In acknowledgement of bilingualism in Malta and in trying to facilitate the interviewees as much as possible, I let the participants choose whatever language they preferred for expressing themselves. Except for three English-speaking students who naturally preferred to converse in English all other participating students talked in Maltese. While some of the participating teenage students were found very capable of articulating their reflections and relating their stories, others struggled or found it difficult to reveal their inner thoughts if ever they wanted to. I observed several interviewees resorting to examples, talking in the third person, and/or interjecting their own dialog with exclamations such as

"*kif ħa naqbad ngħidlek*" ["how am I going to tell you this?"]. But then at times it was not clear to me whether this was truly a problem of articulation or the students' concerns about power-differential. In the specific case of my research I had the teacher-student power-differential adding to the naturally-occurring interviewer-interviewee coercion (Ireland et al. 2009; Åkerlind, 2005a; Dortins, 2002). In my research I tried to ensure that I was not teaching the prospective research participants (as I will discuss later on in the section on ethical conduct) but experience taught me that it takes much more than staying away from specifically being the students' assigned teacher to overcome student-teacher power relations. In several ways I tried to dampen this differential. Through the short walk from the meeting point to the interview room I sought to engage in social conversation with the student about college life and studentship, highlighting our shared experience as college attendees and as students. Through the interviews I set on a desk *beside* the interviewee rather than across a table to help minimize the power differential (Hennink, Hutter & Bailey, 2011). In doing my best to refrain from asking leading or binary questions, and in trying to nurture an empathic and non-judgmental attitude hence creating a relaxed favourable mood for the participant to speak his/her mind, I saw myself working towards dampening the power differential. But over and above the teacher-student and the naturally generated interviewer-interviewee power differential there was my tenure as an academic staff member of the college to consider, as well as my mature age as teacher-interviewer. Also, in a small island like Malta, it may also happen that you know some of the students' parents. In my research I found that significant for rising above the power-differential to encourage participating students to tell their story is the sustained empathic attitude of the teacher (I strive for) and the non-judgemental researcher (I seek to become), the participant's willingness and communicative skills, and the encompassing environment. I was pleased to come across interviewees who made it explicit that they had enjoyed the interview, at times spontaneously verbalising their enjoyment in participating, as well as interviewee comments such as "*ma nafx kif mhux qed nistħi ngħidlek dawn l-affarijiet miss*" ["I don't know why I'm not

embarrassed to be telling you all this miss"]. As Bowden (2005) remarks "A well-conducted interview inevitably results in the person interviewed revealing something about themselves they had not expected they would" (p.31).

4.2.7 Transcription: a parallel task simultaneously a bridge

Though it was not at the same rate as that of interviewing, during the data generation period I took up transcribing interviews as well. Whilst engaged in this task I kept a critical ear listening to my own utterances as an interviewer. Straight away this served to identify transcript excerpts to be discarded because of what was deemed as interviewer imprint. It also served to help avoid preliminary conceptualisations of what was being said by the participants, therefore reducing the possibility of influence on subsequent interviews. As aforementioned, focusing on my own conduct as an individual researcher helped me significantly to nurture the empathic attitude Ashworth & Lucas (2000) argue for in doing phenomenography, and consequently to adopt a non-judgemental interviewing stance encouraging students to reflect on lived experience (even if, admittedly, at times I found myself less than the non-judgmental interviewer I aspired to be). Transcribing students' accounts increased my sensitivity to the fact that several participants recounted *ideal* attitude rather than actual lived experience. This did not worry me too much because in doing phenomenography one seeks understanding of the interviewees' *relationship* with the phenomenon (Marton & Booth, 1997) (not say, as in phenomenology you are seeking to uncover the commonalities in immediate experiences). To such criticism Åkerlind (2005) responds that "These sorts of comments show a lack of awareness of the purpose of phenomenographic interviewing" (p.66). While I was still engaged in conducting interviews I did not attempt any data analysis. In this aspect I agree with Bowden (2005) who maintains that interleaving data analysis with the interviewing process can be detrimental to the whole phenomenographic research enterprise. Particularly for a beginner researcher, as was my case, there is a high risk of inadvertently influencing the interview more than necessary. Bowden (2005) emphasises "the abnormality and difficulty of conducting a warm

and supportive conversation with someone without making any comment on the content of the conversation" (p.19).

4.2.8 Summarising phenomenographic interviewing

The experience of interviewing in the phenomenographic style led me to a view of the phenomenographic interview as an expedition mostly led by the interviewee, who takes the interviewer on a tour of his/her interpretation of relating to the phenomenon, with the interviewer as an unpretentious attentive explorer. How well this venture works out depends on the interviewer and the planned prompts to urge the interviewee to get into the leading role, and on the interviewee to respond to the interviewer's encouragement to lead and highlight what s/he foregrounds, and finally on the surrounding contextual circumstances. By far the most challenging aspect of phenomenographic interviewing, in my opinion, is the methodological requirement to bracket pre-suppositions. The capability to bracket presuppositions, or what Ashworth & Lucas (2000) refer to as the adoption of the 'epoché', requires a constant conscious effort towards nurturing a non-judgemental attitude which reflects itself in empathy towards the participant and an authentic effort to put oneself into others' life-worlds. Maybe in a less than perfect world, it is impossible to reveal the world *exactly* as experienced by others. But phenomenographers can nonetheless try their best to approach it explicitly acknowledging what is managed and what is mismanaged in trying to get as close as possible to the participants' interpretations. It is important to keep in mind that the resulting outcome of phenomenographic research relates to the set of experiences as told by the finite group of participants (Åkerlind, 2005a) in the given surrounding context (Marton & Booth, 1997) at a particular time interval (the duration of the interview).

4.3 Doing phenomenographic data analysis

In general my research venture iteratively reading through the data collective towards the next set of categories evolved into a three-staged act.

4.3.1 The three-staged act

During the first stage I struggled to open up exploration on different fronts. Through the second stage I persevered to take my phenomenographic data analysis process forward. As I gained a better handle on doing phenomenographic data analysis I saw my exertion coming together as a determined act even if slow and in a limbo of darkness. Throughout the third stage I then savoured the excitement of clearly seeing the whole object of doing phenomenographic data analysis as it came into full view.

4.3.1.1 Meandering in doing data analysis

I started on the first iteration doing phenomenographic data analysis by focusing on the student's understanding of the tutors as players for learning in NL experiencing. I read through the whole of the transcript data, writing notes as I progressed towards devising my first set of categories addressing variation in the data collective on this issue. I went through four iterations re-reading the transcript data, on occasions multiple times, and revisiting the emerging set of categories of description as I read further into the participants' accounts. I interleaved this process with another phenomenographic data analysis process: reading through the data and writing notes with a focus on the student's understanding of other students as contributors to learning in experiencing NL. Despite my intuition, at the time it was not clear to me whether the student's understanding of the tutors and the student's understanding of other students as contributors for learning in experiencing NL were going to emerge as components of the same hierarchy or not, and how. I chose to remain open by temporarily treating these understandings as separate phenomenographic research focuses. By the fourth iteration interleaving these two analytical processes it became evident that the two evolving sets of categories of description were somehow related but still I could not as yet make out the nature and extent of this relation. It was at this point that I decided to have a break from this strand of data analysis and turned my attention to the other encompassing research question: *What are the qualitative differences in the post-compulsory pre-university students'*

accounts on their experience of NL? I went through nine iterations focused on developing an inclusive hierarchy mapping out this variation before I came back to the question of variation in students' accounts on their perception of others as contributors for learning in this experience.

In retrospect, I note that the research questions played a crucial role guiding data analysis (Barnacle, 2005) and in where I put my focus as I waded through it as a collective: "What makes the difference in terms of what counts as legitimate interpretation of text is often what questions we ask of it – what we want to find out" (Barnacle, 2005, p.53). I make a special note of this because for some time through the data analysis process I found myself struggling to retain distinction between the focus on projected NL experiencing and the focus on perceptions of teachers and other students as contributors to learning by this NL experiencing. Although the former focus (addressed by the first research question) encapsulates the latter (focus addressed by the second research question), yet the foci are different. The first study phenomenon directs attention to how the student relates to others in learning (as well as to how the student relates to resources), whereas the second study phenomenon – in answering the second research question – directs attention to how the student sees others in this act of relating to them for learning in the context of NL.

The shifting from one iterative process to another coupled with the odd day off when too much workload or pressing life commitments kept me away from this work served to generate the recommended time-outs (Åkerlind, 2005c) in doing phenomenographic data analysis. As a part-time beginner researcher I was afraid that if I lost contact with the data and the data analysis process for any substantial length of time the overhead to restart on this work would have been too much. Looking back I also see this interleaving from one iterative process to another as a kind of meandering. In some sense, as an individual researcher doing qualitative research of a substantial scale for the first time, I see myself as having permitted my focus to go adrift in putting on hold one research strand to open up another. Though not exactly the same thing, I am reminded of Barnacle's (2005) confession that as a phenomenologist she was tempted to

spiral off from the mainstream phenomenographic analysis process to follow up on issues of interest arising from the data. Looking back, overall I did not lose sight of the research objectives (Bowden, 2005), but I found myself having chosen a longer route through the data analysis than if I simply stuck to answering one question in its entirety before starting on another one (considering the overhead to restart from where I left off on the next iteration in resuming a specific data analysis process). In addition to this meandering resulting in lengthening of the data analysis process were the additional tasks I took up, including the pre-processing task of listening to the interview recordings, and the first-time use of QDA software to organise, annotate and manage the collective of transcripts, as I explain further on. However, I note that in view of the close hierarchically inclusive nature of the research foci (as set out by the research questions), this meandering helped accentuate to me as a novice researcher the importance of being clear at all times about the intended research focus and the need to painstakingly seek to retain a sharp focus on it throughout the research process.

4.3.1.2 Slow progress in the limbo of darkness

My experience of doing phenomenographic data analysis moved from thinking about following methodical recommendations to living out phenomenography, seeking to align my practice with philosophical beliefs and values. I see the iterative process leading to the outcome space as an emotionally charged expedition. Initially, I was feeling insecure in my practice reading and rereading the transcripts, writing notes and 'coding' the collective of transcript data.[5] Through the iterative process[6] I was enthused by the experience of seeing things anew with every read through the data, but simultaneously, I was troubled by the instability this iterative process created.

[5] Appendix C2 illustrates the backend coding I carried out

[6] In Appendix C3 I present the draft categories of description through the first four iterations (focused on the teacher as other) through the data analysis process towards an outcome space answering the second research question

In doing phenomenographic data analysis I agree with Åkerlind's (2005c) claim that categories of description and structural relationships are to be addressed throughout the analysis. After all they are distinct *yet inseparable aspects* of the same person-phenomenon relationship. Nevertheless, through the first iterations I found myself focusing almost exclusively on delineating the categories of description. It was only between the third and fourth iterations that I started to give due attention to the structural relationships between categories and within. It was at this roughly mid-way stage that the categories of description were seen stabilising somewhat, but for some time it was not clear to me how they were going to come together 'neatly'. Through the iterative process I feel that for an amount of time I travelled through a tunnel of darkness, in the earlier part until I saw emergence of the categories of description, and in the later part the evolution of the structural relationships differentiating and simultaneously logically linking the categories of description.

In the earlier part of the data analysis process I took to naming the categories. In their most recent state the categories of description related to the experiencing of NL were labelled 'In-disjunction', 'In-separation', 'In-connectivity' and 'In-community', and the categories of description describing the perception of others as contributors for learning were labelled 'Lone & Directed', 'Assisted & Guided' and 'Facilitated & Convened'. In my deepening mindfulness of the non-judgmental stance I gave up the use of labels.

4.3.1.3 Deepening awareness in hands-on experience

For the outcome space mapping out the different ways students' accounts advance NL experiencing, it was through the eighth iteration that the structural relationships surfaced clearly and convincingly to me. Rereading the transcripts I started to find that I could somehow explain what was being said in an inclusive hierarchy. It was as if the structural relationships formed the frame and the cut-work of a jig-saw puzzle, and the individual pieces made up of excerpts of the students' accounts were falling into place as I read and reread the transcripts. As aforementioned, in total I had gone through nine iterations spread out across

more than seven months to come up with a stable and logically neat outcome space describing the collective of the student's accounts which I had in hand – what I am advancing as an emergent progression of expanding awareness in NL experiencing, a constitution emerging from the generated set of post-compulsory pre-university students' accounts.

For the other outcome space advancing an emergent progression of expanding awareness in perceptions of teachers and other students, I went through eight iterations which were spread out across eight months, with a break of almost three months between the third and fourth iteration. Even if by the third iteration I was conscious of a relationship in the perception of other students and of tutors as players for learning in experiencing NL, I only took up bringing these two perceptions together from the fourth iteration. This was after the long break I mentioned earlier. For some time I mused about a two-pronged inclusive hierarchy which came together at the most elaborated category. Yet, reading and rereading the transcripts and observing how other students and the tutors were all being considered as learning 'reference points', if at all, together with the persistent occurrence of pair-wise distinctions, led me to a linear three-tiered inclusive hierarchy describing human others in learning.

I consider the whole of the iterative process doing phenomenographic analysis to be emotionally charged, but it was the last iteration which held the exciting moments; reading through the set of transcripts and confirming that what was being said was explainable by the neat outcome space describing the experience. Nevertheless I note that these findings are open and new research may give an alternative or more elaborated view than what I present in the next chapter.

4.3.2 Access only to participants' accounts

Within the context of this doctoral study I engaged myself doing phenomenographic data analysis in my effort to reveal variation in the post-compulsory pre-university student's experiencing of NL. I sought to discover this variation by phenomenographically analysing students' accounts of their lived

experience of NL. In so doing I do not deny my personal imprint on the investigation, even if I did my best to bracket my own pre-suppositions. As Ashworth & Lucas (2000) remark "a total expunging of these presuppositions is a counsel to perfection" (p.297). Here I also come back to Saljö's (1997) point that we only have access to participants' accounts and not to the actual person-phenomenon relationships. Ashwin (2006) stresses that the term 'accounts' is better at describing what is actually in play. In collaboration with others he recently reiterated that accounts generated through interviews "cannot be seen as given direct evidence of students' conceptions or experiences" (Ashwin, Abbas & McLean, 2013, p.3). I do not regard this issue as discouragement for taking up phenomenography, but I do recognise that in doing phenomenography I am mapping out a description of the relationship between participants' accounts and the phenomenon of concern, and not directly the relationship between the participants and the phenomenon.

4.3.3 Value in listening to interview recordings

In anticipation of what I was considering as the formidable task of analysing thirty-two transcripts of about ten pages each phenomenographically when time for research was nowhere to be found because of pressing life commitments – which in heightening bouts I had to cope with through much of this phase of research development and beyond – I took off by listening to the interview recordings as a way of starting to familiarise myself with the data. Apart from finding myself a way to hold on to my research development I found myself attending to the fine details of the conversations (such as a giggle, emphasis in speech, a pause, or a sigh) which I did not capture in the verbatim transcripts. Through the earlier transcription process I could have used the Jefferson Transcript Notation but this would have increased the transcription time multi-fold. Hence, even if I missed mapping the fine details of conversations in the transcriptions, the exercise of listening to interview recordings also served as an alternative route to help bring my interpretation close to the participants' accounts. In the long run, taken up at the beginning of the data analysis stage it

also served as a means of safeguarding against abstraction. Additionally, it served as an encouragement to take the first plunge analysing a sizable amount of data phenomenographically.

4.3.4 Incorporated use of qualitative data analysis software

In the context of my research I used qualitative data analysis (QDA) software for managing, annotating, searching and retrieving the transcribed accounts or parts thereof. I used this software tool to mark transcript sections of interest, to annotate them, and at times to attach comments to them.[7] As mentioned earlier, as such this task took me somewhat astray of the demands of phenomenographic data analysis. The risk here was that of losing sight of the specific objectives of the phenomenographic data analysis process with a "Too strong focus on details" which "can ...lead to going off on tangents during the analysis" (Åkerlind, Bowden & Green, 2005, p.82). Phenomenography does not incorporate coding in the sense of content analysis (Marton, 1986) but it does incorporate the annotation of generated data (Åkerlind, 2005c). In my work I took up this labour-intensive task not by order of individual transcripts but by research question focus currently addressed. Besides, the resulting subtasks where again broken down by count of transcripts and processed in three batches, one at a time, taken up as a precursor to the next of the first three iterations of the iterative data analysis process. Through the next iteration of the data analysis process I still followed the manual procedure mapped out by Bowden (2005) of reading through the collective of transcripts in quick succession to constitute the next set of categories of description, and in relation to this process I still took to manually writing notes as well. Hence the incorporated use of QDA software in my research enterprise was for data management purposes, and served as an opportunity to experiment using QDA software for the first time. In view of the research process, the use of QDA software proved beneficial in the earlier stages as another means to engage with what the participants said beyond any specific words to understand "underlying intentional attitude towards the phenomenon

[7] In Appendix C2 I incorporate an illustration of this

they [participants] are describing" (Åkerlind et al. 2005, p.87), and, in the later stages, as an efficient means to locate quotations and attached research notes.

4.3.5 Individual researcher's stance

As an individual researcher I sought ways to cross-check my own work and seek feedback from others (Åkerlind, 2005c). As highlighted in other parts of this section I held back from outsourcing the time-consuming research-related chores of verbatim transcription of interviews and the Maltese-to-English translations. I also procured myself the additional tasks of listening to the audio-recordings as a pre-processing task and using QDA software to annotate and manage the set of transcripts as discussed above. In doing this work I came to value these mundane tasks as compelling opportunities to engage with what the participants advanced of their understandings, approaches and intentions towards the study phenomenon.

In my attempt to obtain preliminary feedback on my work I got a professional translator to proof-read my work, particularly to check my interpretation of students' accounts. I also had a trusted workplace colleague who has experience of online teaching and learning to read the preliminary findings, following this by a discussion meeting. In the next section on research quality I discuss these preliminary validity checks in more detail. Moreover, as reflected by this chapter on research methods, I worked at being as transparent as possible by providing a detailed outline of the research path followed.

4.3.5.1 The problems of natural attitude and pre-suppositions

In my work I made a conscious effort to resist assuming that the way "I see something is the way it is" (Bowden, 2005) or "the natural attitude" (Marton & Booth, 1997). I strained to keep my mind open to different ways of seeing and strictly on the meaning conveyed when reading through the transcripts. As I went through the collective of transcripts one after the other I made an effort to keep an open mind to other possible ways of seeing, striving to let go of my "natural

attitude". My individual researcher stance made me quite sensitive to this problem.

Equally, as an individual beginner researcher, I was concerned with the problem of pre-suppositions (Ashworth & Lucas, 2000). I made it a point to work on the verbatim transcripts in whatever language the participant used, thus avoiding another layer of interpretation, even if the process of doing the translations was also an anchor on my thoughts about what the participant was saying. On several occasions through a given iteration, I went through the set of transcripts several times, even focusing on a particular aspect of the question through a read cycle. I expended effort in trying to get to the meaning of what was being said in the transcripts.

4.3.5.2 Avoiding abstraction

Working on my own I was also very much concerned about the risky business of degenerating into abstraction (Säljö, 1997; Richardson, 2000). The risk of abstraction is also related to the aforementioned problem of pre-suppositions. This was another reason for striving to keep myself close to the data at all times while going through the whole set of transcripts (Bowden, 2000, 2005). I followed Bowden's (2005) advice that "if it is not in the transcript, then it is not evidence" (p.15). As I went on with the analysis to construct the categories of description, I strived to avoid abstraction by requiring evidence from the transcripts at all times (Bowden, 2005; Åkerlind, 2005c). Besides, through the iterative process I kept reading through the whole transcript. It was only in the later stages, when the categories were stabilizing, that at times I permitted myself to skip reading sections of transcripts which did not address the current research focus. In my decision to stick to the whole transcript approach I ran the risk of focusing too much on individual transcripts (Åkerlind, 2005c) which gave rise to my concern on focusing on individual participants (exacerbated by my prior knowledge of them). In a way I see myself as having made matters worse for myself in trying to follow Åkerlind's (2005c) footsteps by sorting and re-sorting transcripts through the next iteration. At the beginning of the data analysis process it was a

substantial mental effort for me to keep my focus directed on what was being said in the transcripts rather than who was saying it. Admittedly, it *did* take me some time to truly distance myself from individual transcripts. Through the first iterations, when I was still struggling to keep on top of the thirty-two transcripts, I could not help thinking in terms of participants when writing notes on differences and commonalities in what was being advanced in the accounts. As my familiarity with the data developed I started transcending the transcript-participant relation. I also started attending more to what was being said within and across transcripts without really thinking about the transcript. I found myself exploring "the range of meanings within the sample group, as a group, not the range of meanings for each individual within the group" (Åkerlind, 2012, p.117).

4.3.6 Focus on the collective

As I said above, through each cycle I sorted the transcripts by order of the evolving set of categories of description but all the time I was conscious that any given transcript may not be spanning a category of description in whole, and/or the transcript spanned more than one of the categories of description (Åkerlind et al., 2005). Admittedly, during the earlier stages of the iterative process I struggled with this notion of multiple qualitative ways of experiencing the phenomenon advanced in the same transcript, but as I gained a better handle on considering the data set *as a whole* in reading and re-reading the transcripts, I became progressively more comfortable considering a transcript projecting multiple categories and a category projected across multiple transcripts. Prior to going deeper into the phenomenographic data processing methods, the act of sorting and re-sorting transcripts can lead to an individual transcript viewpoint rather than the collective viewpoint wherein a transcript might incorporate more than one category of description, and a category of description might be spanning more than one transcript. In short, I am not against the sorting and r-esorting of transcripts but I do advise caution in bearing in mind that a transcript may only be in part aligning to a given set or simultaneously aligning to two or more of the emerging sets. In Appendix C1 I include a number of snapshots I took as I went

through the iterations. The zoom detail presents how, in the course of my work, by tagging transcripts with post-it notes indicating the current relation to categories, I reconciled the exercise of sorting and re-sorting transcripts with the need to relate to the collective of participants' accounts rather than individual accounts.

4.3.7 Constitution of structural relationships

In my research, seeking to accomplish an inclusive set of structurally related categories of description (Marton & Booth, 1997) towards the constitution of a structured outcome space, I aligned to Åkerlind's (2005c) proposal to aim for a balance between refraining from explicitly searching for structural relationships early in the iterative data analysis process, and consciously increased this effort to seek structure before the process matured too much. In my experience doing phenomenographic data analysis, through the earlier stages it came naturally to me to focus exclusively on identifying and revising the categories of description. As I progressed through the iterations and the categories started to settle somewhat, my attention was more on differentiating between them. Even if I tried my best to seek structural relationships going across and within categories on the basis of participants' accounts, on my part it remained a persisting aspiration towards perfection rather than an achieved objective. That is, I recognised the logical structuring to incorporate my researcher input even if I kept returning to the transcripts to substantiate it.

The set of categories of description are seen emerging from the data by way of the researcher (Åkerlind, 2012, p.117). In total, the outcome space is a constitution capturing the logical structuring evidently advanced by the participants' accounts and the logical structuring the researcher 'appresents' in the participants' accounts, yet not so clearly manifested:

> "There is no expectation that there will be a one-to-one relationship between transcripts and categories of description. This makes the empirical data an imperfect source of evidence for the outcome space

> as inadequacies in the data may mask, or not highlight, structural relationships" (Åkerlind, 2005c, p118).

Åkerlind's (2005c) step-by-step detailed account of how she worked through the data analysis was inspirational to say the least in helping me rise to this core challenge of doing phenomenographic data analysis as a beginner phenomenographer. In the end, the core issue of doing phenomenographic data analysis is to logically map out the qualitative differences in participants' accounts on the experiencing of the phenomenon of concern in an open inclusive hierarchy. I experienced this in my research as a delightful end to the demanding iterative process which is indeterminate at the outset.

In summary, phenomenographic data analysis is a bottom-up research approach in the sense that the researcher seeks to reveal variation in person-world relationships as emergent from participants' accounts of their relationship with the study phenomenon. Prosser (2000) notes that phenomenographic data analysis is "an act of discovery (or constitution) rather than an act of verification" (p.37). In view of the objective to draw out an inclusive logically structured set of 'categories of description' from the data mapping out the qualitatively different ways in which the common study phenomenon may be experienced (Åkerlind, 2005a), the phenomenographer goes through a laborious iterative process reading, annotating and sorting the data set as a single unit to arrive at the next tentative set of categories of description. This process goes on until a minimal set of qualitatively distinct categories stabilises and the structural relationships distinguishing between categories and simultaneously pulling them together into a coherent whole is established, in part emerging from the data and in part as appresented by the researcher working with the data as a collective.

Åkerlind (2005a) sees this complete representation, or 'outcome space', as:

> "a way of looking at collective human experience of phenomena holistically despite the fact that the same phenomena may be perceived differently by different people and under different circumstances" (p.323).

Considering that the phenomenographic researcher only has access to the participants' accounts, what is obtained is a holistic description of the qualitative differences in participants' accounts on their experiencing of the phenomenon. This description takes the form of an inclusive hierarchically structured map, constituting variation in human experiencing as an emergent progression of expanding awareness.

4.4 The quality of the research

In doing phenomenography I sought to capture variation in experience in a finite description, which variation in experience in general is as infinite as the number of different possible experiencers (even if Marton & Booth (1997) note that empirical evidence continues to show otherwise). The phenomenographic outcomes are also considered to be open in the sense that in general they are a partial truth (Marton & Booth, 1997; Åkerlind, 2005a). Each outcome space is partial because the mapping emerges from *the accounts* of research participants, and not the actual experiencing (Ashwin, 2006; Ashwin et al., 2013). It emerges from the accounts of *a group of participating students,* hence not incorporating *all* experiencing persons (Marton & Booth, 1997; Åkerlind, 2005a). It emerges from my *individual research stance* as a beginner phenomenographer analysing the generated data even if this researcher claims to have done her best to move away from presuppositions, to stay close to the data at all times, and to bring in outsiders to obtain feedback and comments on interpretation and the emerging outcome. It emerges from the researcher's individual stance *writing about the research* as it develops through the data analysis process, thus not really capturing what cannot be expressed in words. It emerges from *a snap-shot* of relations among the participants' accounts, the study phenomenon and the researcher therefore not accounting for temporal change. Finally, it emerges from a depiction of relations pulled together across a time span, because the generation of data and its analysis extended over a period of fifteen months. All through the research process I kept lapsing into such reflective and reflexive thoughts denoting my concern with building quality into the research. Research

quality is reflected in all the decisions, procedures and actions taken through each step of the research journey. As Sin (2010) remarks, building in quality in research enterprise “extends considerably beyond satisfying the validity and reliability criteria for rigor” (p.306). The concern for research quality cannot be considered as an afterthought at the end of a research expedition, but necessarily as a structuring element of the research process in general. Indisputably, the research quality, consciously or unconsciously pursued, shapes the research no less than the generally overlapping limitations of an investigative study.

4.4.1 Research quality in terms of ethical conduct, reliability and validity

Although as Morse et al. (2002) argue it is the researcher’s responsibility to ensure research quality “rather than external judges of the completed product” (p.15), still the external judges need to be convinced of the research quality. At the planning stage of a research expedition, a judicious institutional review board (IRB) acting on the behalf of the national governing body needs to be convinced of the ethical bearing of proposed research. During research development, albeit not so much as ‘external judges’, potential participants need to be convinced of the authenticity of the researcher and the usefulness of the proposed research if they are expected to willingly and openly participate in the research venture. For instance, prospective interviewees cannot be expected to speak their mind to a researcher if they are not convinced of the researcher and the research in which they are requested to take part. Nearing conclusion of this research expedition I encountered quality-related concerns focusing on the need to have research findings accepted in the research community and the community at large. In this section I draw attention to my effort trying to build quality into the research as an on-going pursuit in terms of ethical conduct, reliability and validity.

4.4.2 Ethical conduct

I found the question of ethics to reach far beyond any legal demand permeating all decision-making and aspects of research activity in general. In view of legality,

before starting out on fieldwork generating and analysing data I had to seek the approval of two institutional review boards (IRBs) because the research was to be conducted in a country other than the university wherein the doctorate was being read. This apparently straightforward procedure turned out to be a three month struggle due to the different demands set out by different IRBs. In my work the demands were exacerbated by the relatively young age (16-18 years) of the research participants. Additional to participants' consent I had to seek guardians' consent and college permission.[8] In view of bilingualism in Malta, I also had to present all research instruments and related participation consent forms in Maltese and English, as required by Maltese law. In passing I note that I personally took up doing the necessary translations. Although this work proved useful during fieldwork, at the beginning it was experienced as an extra task lengthening the process of obtaining ethical clearance significantly and delaying the data generation phase. In relation to my research I obtained the signed permission of the college principal, consent of students and their parents (or guardians) for those under eighteen (18) years for participating in the research generally, and the consent of interview student participants specifically.

In an earlier section of this chapter I commented on the considerable time lapse between the NL course experience and the interviews scheduled to both maximize the possibility of finding participants and to accommodate them in their consent of an interview. I also note that nonetheless I had students, directly or indirectly, refusing the interview invitation even if earlier they had expressed their willingness to participate in the research. I even had students who never turned up for the pre-agreed interview which had been scheduled at a time stipulated by the student. My initial strategy was to use non-intrusive online technologies like electronic mail and the Facebook messaging facility to invite students. This approach was generally unsuccessful. I found it more effective to invite potential students for an interview when I came across them at the college – which wasn't an infrequent occurrence – though you may argue that power relations were called to play here even if I was not teaching the students then. In

[8] Appendices A1, A2 and A3 present the consent and permission forms used for conducting the research

acknowledgement of their effort, students who chose to participate in the research were presented with a small gift. Each interview transcription was emailed to the corresponding participant for any preferred changes and/or confirmation before the start of the data analysis process. Additionally, in further recognition of their participation in the research, towards the end of the study, I e-mailed the participants a summary of the main research outcomes, once more thanking them for their participation.[9] In view of research development, I faced the difficulty of giving up teaching the concerned students the subsequent year. As I point out elsewhere it takes much more than releasing teaching commitment to eliminate teacher-student power differential. My consolation for the irrational pain of not being part of the team teaching the students when during their second year of the study programme was the cheer with which most students greeted me when we used to cross paths in the college corridors and the general positive response to interview invitations.

The small-island context of Malta makes it hard to adequately hide the identity of the research participants and simultaneously provide the research audience with enough context detail to put the work in perspective. In my research I found that more important than any ability to keep secret the identity of the research participants – though a serious effort in this direction is still considered pertinent – is to treat their participation in research graciously and respectfully simultaneously remaining true to the research at hand.

4.4.3 Validity

Sin (2010) explains research validity as "the internal consistency of the object of study, data and findings" (p.308), and in further clarification Åkerlind (2005a) explicates it as "the extent to which a study is seen as investigating what it aimed to investigate, or the degree to which the research findings actually reflect the phenomenon being studied" (p.330). Through all stages of my research journey I frequently went back to my research questions, asking myself whether the current effort was on a positive direction towards my pre-set research goals. I

[9] Appendix A4 presents the post-research email posted to participants towards the end of the study

was particularly anxious about this alignment during the data generation stage. Not that through the data analysis stage this was less important (because I even frequently felt the necessity to go back to the research question currently addressed through the iterative process), but the dependency on interactions with others by way of the interview intensified the uneasy feeling of having no fallback possibility if I somehow missed out on adequately living up to the needs of phenomenographic interviewing. Green (2005) also reports anxiety on the idea of having to discard data if the interview did not produce "useful, uncompromised data" (p.40).

A form of validity check was obtained when the extensive amount of translated transcript excerpts included in the study report were passed on to a professional translator for proof-reading. Through this outsourced work I was explicitly assured that "*ma kienx hemm problemi minn dak il-lat"* ["there were no problems in this respect"]. In the extant literature communicative validity and pragmatic validity are identified as two types of validity which need to be pursued for quality phenomenographic research. Åkerlind (2005a) refers to communicative validity as the extent to which "the research methods and final interpretation are regarded as appropriate by the relevant research community" (p.330) and pragmatic validity as "the extent to which the research outcomes are seen as useful and the extent to which they are meaningful to their intended audience" (p.330). As I said earlier on the preliminary findings were entrusted to a workplace colleague, following this by a discussion meeting. Later, prior to publication, communicative and pragmatic validity were in part again sought by passing on the research report to two trusted friends for preliminary review. 'In part' because, though both are highly knowledgeable in their chosen profession, they are not conversant with phenomenography. Further communicative and pragmatic validity is aspired upon publication.

4.4.4 Reliability

Sin (2010) defines reliability as "the extent in which findings of a study can be replicated" (Sin, 2010, p.310). Reliability in the sense of replicability of results

does not make sense in the context of phenomenography because resultant variation in experience or perception sought across a set of participants' accounts is open (Marton, 1986, Marton & Booth, 1997). Time and time again I am reminded of phenomenography likened to a discovery mission of fauna on a remote island (Marton, 1986). As an individual beginner researcher I worked in isolation and hence reliability measures such as 'coder reliability check' and 'dialogic reliability check' in the sense of involving more than one researcher were not an option. However, as an individual researcher I saw myself seeking a form of dialogic reliability check by including a large selection of quotations in presenting my findings for the audience to judge for themselves, and passing on the detailed preliminary findings to a trusted friend and work colleague for feedback. This came back in the form of written comments and a discussion meeting lasting for over one hour, as abovementioned. I was encouraged in two different ways. Primarily I took courage from the written comments reiterating or extending my observations, clearly showing that my findings resonated with his experience as a professional teacher who also uses networked technologies in his teaching practice. Additionally I was heartened by his reply extrapolating on my findings about variation in students' perception of other teachers and students as learning contributors by a graph in an attempt to show this variation *quantitatively*. Figure 5.4 at the end of chapter 5 is my response to this feedback wherein, rather than delineating relative quantities pictorially I demarked the shifting perceptions of teachers and other students as the other primary stake-holders in the NL experiencing.

More than that, as suggested by Åkerlind (2005a), I sought to build in reliability through the intensive iterative process used to analyse the data. During the data analysis stage, through each iteration, less than ten (10) transcripts were withheld from the initial configuration of the next set of categories of description, and then brought in towards the end of the cycle. In the earlier part of the data analysis this exercise served as a motivation to move on to the next cycle. At the later stages this was a welcome confirmation of the outcome.

In retrospect I see myself as having gone a long way in my attempt to build in quality into the research as it developed even through the use of QDA software, searching for quotations evidencing claims when these were not recalled beforehand. This does not mean that the study is not bounded by a number of constraints as I explicitly point out in chapter 6. Nevertheless, I realize that I did my best to lay this out, because at the end of the day, if the research is to have any value, what external judges have to say about the development of the work matters a lot too.

4.5 Conclusion

In this chapter I gave a detailed account of the research methods I employed in doing phenomenography. Particularly I focused on the data generation methods I followed and my trajectory doing phenomenographic data analysis. In retrospect I note that the experience of doing phenomenographic research on a substantial scale was for me an intensive learning experience. I do not believe that my performance was faultless but I am confident that I managed it to a fair degree.

In the next chapter I present the outcomes of this research expedition. These are the two resultant phenomenographic outcome spaces. One describes the qualitative differences in students' accounts on their experiencing of NL. The other describes the qualitative differences in how the students' accounts advance their perception of teachers and other students as contributors in learning. I consider the two resultant outcome spaces to be the phenomenographic coming together of a specific group of research participants, a specific researcher, and a specific study phenomenon within a specific time frame.

Chapter 5: The Student's Experience as a Developmental Progression of Expanding Awareness

5.1 Introduction

In the preceding chapter I laid out my understanding and experiencing of phenomenography. I offered a detailed description of the data generation and analysis processes I went through in my attempt to answer the research questions. In this chapter I proceed by presenting the findings of this research effort. These findings represent an answer to the two research questions which I reiterate for convenience:

1. What are the qualitative differences in Maltese post-compulsory pre-university students' accounts of their Networked Learning experiences?
2. What are the qualitative differences in these students' accounts of teachers and other students as contributors to their experiences of Networked Learning?

I answer the two questions separately in different sections. For each question I present the resulting outcome space together with a delineation of the referential and structural relationships following this with a detailed description of each of the categories of description including evidence from generated data. For each outcome space I seek to put a spotlight on the hierarchical inclusivity of the categories, the shifting focus in growing awareness, and the increasing learning empowerment. I advance looking at variation in different aspects of the students' experiences of NL as an emergent progression of expanding awareness. In my articulation of this conceptualisation I acknowledge increasing discernment in broad terms but at the same time I do not exclude the possibility of seeing differently in different situations. That is, in foregrounding more aspects of a phenomenon and correspondingly assuming an elaborate act in one situation does not exclude the possibility for one to foreground less aspects of the same phenomenon and correspondingly act less elaborately in another situation.

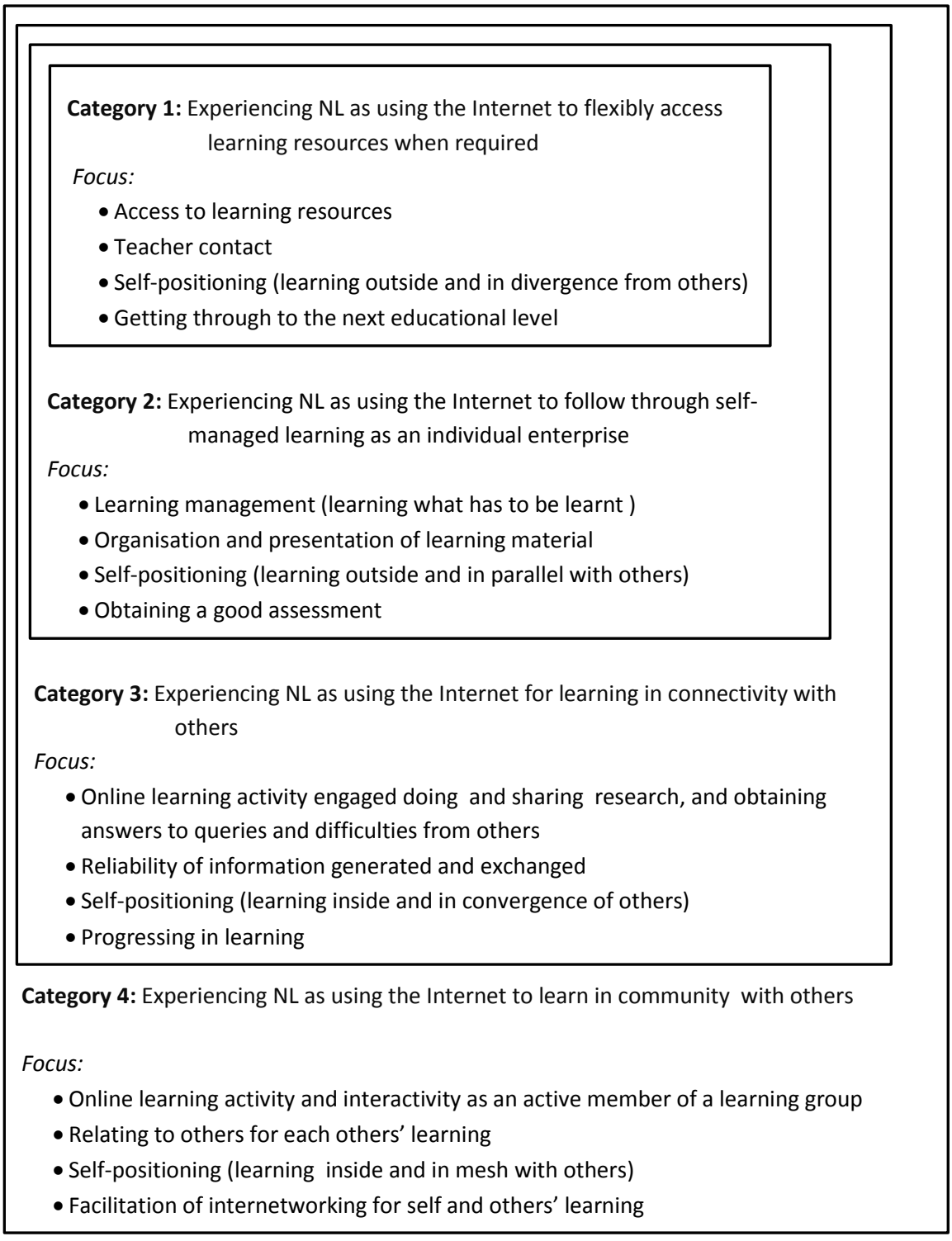


Figure 5.1: Outcome space – experiencing NL

5.2 Section 1: Variation in Experiencing NL

All the thirty-two research participants acknowledged the incorporation of the Internet in the learning context, but as a collective, in broadening variation, experienced NL as:

- An online learning system for flexibly accessing learning resources;
- An online learning system for individual self-managed learning;
- An online learning system for learning in connectivity with others;
- An online learning system for learning in community with others.

In Figure 5.1 I provide a 'panoramic' view of the different ways of experiencing NL as configured through this phenomenographic investigation. In order, these four categories of description are considered to represent increasingly powerful ways of experiencing NL. By way of this outcome space I present the different ways of experiencing NL as a complete picture, even if in general it remains a partial portrayal in development. It is a way of seeing the whole picture of variation as constituted by this researcher from the research participants' accounts. This graphical representation is a *rationalisation* of the variation revealed by the participants' accounts and hence any given instance of NL experiencing may not exactly align to one particular category of description laid out by this mapping. This logical hierarchically inclusive arrangement needs to be considered as a way for understanding the apparently chaotic nature of experiencing NL, hence providing an initial insight into this person-phenomenon relationship.

5.2.1 Referential and structural relationships

Considering the different ways of experiencing NL from a *referential* perspective, variation *in meaning* shifts from experiencing NL as flexibly accessing the learning resources when required, to experiencing NL as coping through online self-learning provision, to experiencing NL as learning through connecting with other parts of the system for personal learning, to experiencing NL as learning through connecting with other parts of the system for personal and others' learning. Increasingly, the variation in NL experiencing from a referential

perspective has the student shifting from *accessing the learning system (or part thereof) for learning individually, to a way of relating to other constituent parts of the learning system*.

Considering the different ways of experiencing NL from a *structural* perspective, the variation shifts from experiencing NL as an online learning element which the student individually refers to for gaining access to learning resources; an online learning system which the student individually has to manage as a self-managed enterprise in parallel to others; an online learning system of which the student is part of, connecting to other parts of it for personal learning; and an online learning system of which the student is a part, connecting with other (human and non-human) parts of it for both personal and others' learning.

Structurally, the student's NL experiencing is thematised by the:

- Use of technology for learning (a technological proficiency);
- Learning activity and related goals (a learning proficiency);
- Self-positioning in relation to others for learning (a social proficiency).

As awareness grows, the student shifts from using *technology* to access course learning material to co-producing and co-creating learning material; from *learning* as studying the course-notes for getting through the educational system, to learning as researching, discussing, re-assembling and problem-solving with others, collaboratively learning in empathy with others; and self-positioning in divergence and away from others, to self-positioning in collaboration and connectedness to others for learning. That is, from this phenomenographic analysis, the student's NL experiencing appears to be structurally comprised of three critical themes of expanding awareness: a technological proficiency, a learning proficiency, and a social (identity) proficiency, picturing the student shifting from standing on the *outside* of the learning system to being *an integral part of it*.

In the graphical representation of Figure 5.1 I indicate the focus for each category. In so doing I seek to provide an explicit view of the structural differentiation between categories, thus better illuminating the referential aspect, also in light of the inseparability of these two analytical perspectives.

<table>
<tr><td>Referential Aspect</td><td colspan="2">Structural Aspect</td></tr>
<tr><td></td><td>Making a NL experience</td><td>Having a NL experience</td></tr>
<tr><td>(4) including (3) and connecting to human and non-human others for personal and others' learning</td><td colspan="2">Category 4
Two-way communication
Learning from personal and others' research and online exchanges for everyone's learning achievement
Ubiquitously connected to others</td></tr>
<tr><td>(3) including (2) and connecting to human and non-human others for personal learning</td><td colspan="2">Category 3
Two-way communication
Learning from personal and others' research and online exchanges for personal learning achievement
Strategically connected to others</td></tr>
<tr><td>(2) including (1) and self-managing learning</td><td></td><td>Category 2
One-way communication
Learning from course materials to attain a good assessment in getting through the educational system
In-parallel and in-sync to others</td></tr>
<tr><td>(1) Flexibly accessing learning material</td><td></td><td>Category 1
One-way communication
Learning from course-notes to somehow get through the educational system
Away and out-of-sync from others</td></tr>
</table>

Table 5.2: Referential and structural aspects of experiencing NL

The outcome space suggests a dividing line setting apart the first inner two categories and the outer two categories. For the first two categories, experiencing NL has the student standing outside of the learning system. The student relates to the learning system as an individual enterprise, whether this is in parallel to or in divergence of what other students are perceived doing. In this sense the student is considered to be '*having'* a NL experience. For the other two categories, experiencing NL has the student as an integral part of the learning system. The student relates to the other constituent parts of the learning system of which s/he is part. In this sense the student is considered to be '*making'* a NL experience. Therefore, whereas referentially the categories of description are in order logically inclusive, structurally they are of the type 'having a NL experience' or 'making a NL experience' in view of technological, learning, and social proficiencies as themes of expanding awareness. In Figure 5.2 I tabulate these referential and structural relationships which from bottom to top denote the student's increasing learning empowerment assuming the NL approach.

5.2.2 Categories of description: On NL experiencing

In this section I elaborate on each of the elicited categories of description. These categories arise from analysis of all transcripts through all nine cycles of phenomenographic analysis spread across eight months.

5.2.2.1 Category 1

Experiencing NL as the online accessibility of learning resources when required

Aligning to this category of description students attend to the availability of learning resources online and the learning flexibility, the teacher contact, getting through to the next educational level, and their standpoint as learners in separation from other students.

The student aligning to this category focuses on the availability of the learning resources online and the flexibility this convenience provides. The flexibility to

access the learning resources and the teacher whenever and wherever is discerned as a shift from having to necessarily attend the face-to-face lecture with its set time and location. For the student this is a different experience than having to attend the habitual lecture to obtain the teacher's notes and assignments. The student does not have to ask the teacher or class-mates for these learning resources when for some reason the lecture is missed:

> "Listen. You appreciate it more. You appreciate more the fact that you are better accommodated. Even as in something that you can access it whenever you like. Besides, whereas beforehand it used to be the teacher giving you the worksheet and the notes, now if you miss a lesson or you are absent from school for a number of days, you can log in from home and find all the learning material there. Hence it looks like we gained from it in different ways, except for the fact that then you can become lazy for it." (T26:3/4)

The student aligning to this category attends to such things as the ease to find these resources online, the soft-copy format of course-notes and related reassurance (of available learning content on demand):

> "As such yes because (on a) computer you can make a lot of backups. Not that security is breeched that often, but one-off you can lose everything ... I think that as such that's it. Backups, printing, and sometimes filing. Not sometimes!" (T19:2)

For students of this category experiencing NL is different from what they are accustomed to in the formal learning environment in that it makes students actively go online to get the required course materials:

> "Learning for me was always a question of listening to the teacher. Probably I forget half of it by the time I get home. I have the notes, and know that I have all there is to it there, and study from them. But e-learning, like, it helped me learn more what's involved. It hits you harder. It goes in much deeper, as in, how you should be more responsible. Like, if the teacher – people can't keep on doing things for you. You have to go on and do things yourself. If you want something from the e-learning [site], you just go in and take whatever you want [yourself]." (T21:9)

The student of this category is focused on getting through to the next educational level and hence may easily interpret the NL proposition as an invitation to abandon habitual learning activity because all there is to (teaching and) learning (access to teacher's course-notes and assignments), is available online:

> "I was afraid that at the end I was going to fail. I used to be such a fool. I messed around with Computing. I used to take it for granted that it was easy. At times I did not pay attention during the lesson because I knew that there were the notes on the website." (T30:2)

The student aligning to this category somehow does not manage to discern the change in learning approach. Possibly the student is removed from the whole formal learning experience as Rolè (2014) reports by what she calls a 'Ritenuto' student:

> "No, it depends on the person's approach. Speaking for myself say, someone like me, I tend to leave everything that I have to do for very late. I mean, fine, you're still going to find the (course) work there. But through the (academic) year I keep repeating to myself that I will do it later on. Like – procrastinating. But, like, for me, it is fine. It accommodates me. Then, at the end, before the exams, I go like crazy." (T26:2)

> "Because at first I was not bothered about it [the online learning space]. But then when in summer I told him [classmate] about the resit exam, he directed me to Jclite[10] ... I hardly ever logged on that thing ... I wasn't bothered Miss. I wasn't bothered. But then I was shocked knowing that I did not do well in Computer. Then I started to take it seriously ... because I studied everything from my own notes for the first exam; everything from my notes. I did everything without the Jclite and the like. But then [for the resit] I hardly looked at my own notes because it was all there ... I was not bothered with school." (T22:3/4)

> "To tell you the truth I didn't always do the work. We used to have work to do on the website but it was up to you to do it. True there was the assessment in play but it wasn't such a problem for me because even if I didn't work so much my assessment wasn't that bad. In fact I only did the work which you assigned to us in class. You used to tell us – it was ***

[10] Jclite is the alias of the Moodle-based online learning environment

who did this more than you. True you have the assignments available on the website but he used to tell us to print the work and bring it in class for the next lesson. It doesn't matter that I was late handing it in. That was what boosted my assessment. On the other hand you used to tell us that we had the worksheet online but it was up to me to give it to you for review. That's how it was ... It was a challenge for me because of my difficulties with that subject. Perhaps it was more a question that I let it pass rather than facing up to my difficulties." (T12:3)

Within an encompassing formal learning environment where, as the case of this investigation, the traditional classroom lecture is unquestionably assumed as *the* method of teaching and learning, persistent face-to-face meetings obscure the proposition of NL particularly for a student who is finding it difficult to cope with the subject content, or in variation within the category, the student may be neglecting the learning commitment in a big way as the quotations above illustrate.

In distinction from the case of students aligning to higher categories, the student does not acknowledge the shifted learning approach. The use of the Internet in learning is interpreted as a means for the teacher to make resources available online giving students a means for flexibly accessing them. There is the expectation of the teacher's face-to-face pro-action explaining subject content to the students; the expectation of teacher's orders telling the student what to do, when, where and how; and the need of teacher strictness to make the student do the assigned work:

"Listen, the students – it rests with the students. If the student does not work, the teacher cannot do anything. A teacher can help the student when she gets stuck. But that's it. A teacher cannot do miracles ... it is up to the student. It is up to you (teacher) in as much as you (the teacher) explain (the subject content) well to the student. You would know if they (students) understood you or not ... Hmm, maybe, you check that – — I think, maybe you can check that everyone is doing something. Hmm, keeping track of what everyone is up to ... Because otherwise you can expect what happened to me, you know. Because it was as if nothing happened to me when I didn't do anything, how should one say this ... I wasn't

bothered ... Perhaps, if you threatened me that without (home) work you wouldn't accept me for the next lesson – I don't know how I would have reacted. I don't know whether I would have done it anyway or missed the lesson. I can't tell what I would have done then." (T30:9)

"If you start on the homework after the lesson, some two days later for example, then you are going to see it when it is ready anyway. It's like you don't have much – how shall I put it – it's like you can do it – you have a whole week. You have all the time (to do it) because if you also have an Internet connection you can do it at whatever time you want

<*Interviewer: So you first wait for the lesson to take place?*>

"Oh, that yes ... Always afterwards. Better afterwards. Better afterwards ... because still you need the lesson beforehand. I used to think that you still need someone." (T3:1).

Learning is advanced by this student as an individualistic activity, as is also the case of the student aligning to the next category of description. For the student aligning to this category, online (and offline) communication with the teacher is considered as a one-way teacher to student act unless the student cannot somehow solve a problem elsewhere:

"If it is something major like you hardly understand anything, it's best that you consult with the teacher. You're not going to ask him (class-mate) for sure. But it's not worth it to bother the teacher if it's something minor having to do with the homework when at home." (T3:5)

"I was not bothered about school then. But there was another positive aspect to it Miss. Em, you could communicate with it. At times you used to send us messages and the like. Additionally there you could find more and more all in one place. That is a good thing" (T22:4)

If any, communication with peers for learning is limited to consultation with those few trusted friends for answering some minor difficulty not worth bothering the teacher for:

"Someone who does not laugh at me, or snubs me. I need someone who is ready to help you. Not a person whom I hardly know. Alright maybe if it is something small and we are

there [in class] occasionally I ask, but if I'm going to ask for a detailed explanation I ask someone whom I trust, someone who I know well." (T22:6)

Away from the formal learning setting the student may be found communicating with peers for learning, but as pointed out and exemplified by participants it comes naturally for students to privately turn to classmates for answering trivial questions:

<*You expect yourself to be asking one of your classmates in case of difficulties?*>
"I see that as something normal. You do it in every subject." (T3:5)

"Yes. I used to use them (other students) as a sort of reference point ... We used to do it a lot. A basic thing that students of all schools do." (T19:5)

In summary, a student aligning to the first category only discerns the fact that classroom attendance within a set time and location is not necessary to get hold of learning resources. Foregrounding the online availability of these resources, the student attends to their soft-copy format and the ability to save it electronically, to print it, and/or to file it. The use of Internet technologies is considered in as far as it makes learning resources conveniently available for him/her anytime, and the possibility of the teacher to make contact with the student when occasionally necessary. Student to student communication for learning is considered outside the formal learning environment for consultation with trusted friends.

In the absence of an authoritarian teacher figure, the student fails to get on with his/her learning. In consideration of this failure in learning the student positions himself/herself in divergence and in separation from others. Hence the student is found talking about a tendency for procrastination, external life problems, the assumption that the subject is easy, and the assumption that the subject is difficult.

In aligning to this way of experiencing NL, particularly in view of persisting face-to-face meetings extending online NL provision, technology in learning is

interpreted as a convenient add-on to the assumed offline face-to-face lecture. The student does not discern the suggested 'disruption' from the encompassing traditional teaching and learning attitudes. Technology in learning is interpreted as a convenient add-on to the taken-for-granted classroom based lecture to facilitate access to learning resources. The student aligning to this way of experiencing NL hence retains as separate the online and the offline aspects of learning, with the online aspect as a welcome supplementary component to the assumed offline face-to-face learning approach.

5.2.2.2 Category 2

Experiencing NL as using the Internet to follow through individual self-managed learning

Aligning to this category of description students attend to the learning control in the hands of the student, the organisation and presentation of learning material as built-in support for individual self-learning, the learning criteria for attaining a good assessment, and their positioning as learners learning in parallel to others.

In aligning to this category the student experiences NL as the use of technology to learn on your own and in your own time. The control of learning in the hands of the student is discerned as a shift from the traditional face-to-face lecture and teacher domination:

> "Listen, studying on your own has its advantages and disadvantages because if there is something you don't know – but it was a good experience, you understand." (T15:7)

The student aligning to this type of NL experiencing focuses on the presentation of learning materials, and learning as an individual self-controlled enterprise.

> "When we started using it I didn't – I started to like it better. At least we would go on the Internet and find that everything is organised ... first I used to read the notes. I used to print them at home. I used to highlight the important parts and bring them all together. Then, when it came to the examination, I used to find them already highlighted. I didn't have to compile

short notes because the notes were already in that form. They were easy to follow. Following that we used to have homework." (T16:1)

"At first it took me some time to master the system. But it becomes very easy once you master it. Even if I'm not at home, [say] I came to school, I have the notes with me because they are on the website, the coursework, it's all there. If you have an Internet connection available, you can use it wherever you are." (T4:7)

As with the previous category the student attends to the issue of online availability of learning materials. But the student aligned to this category considers the advantages and disadvantages of this in relation to the students' responsibility to control their own learning in their own time:

"And I repeat, having everything so organised, you don't feel mentally stressed. You know that you have the notes online, you log in and manage to go through the lesson, you do the homework and are up to date. On the other hand, if you are lazy to take notes in class, when you go home you are stressed because you don't have them, you know. That's why it was relaxed, in the sense that if you do your work, you're settled, you know. And all the work was online. That is, we only had to get on with it. That one hour a week. That's why it was relaxed because you do the (assigned) work and you don't feel stressed. I tend to stress myself a lot, hence that thing helps me a lot, you know." (T16:5)

"It's different than when you are in the classroom and asking the teacher for the notes. Even if you miss some lessons – I remember once I was ill for a whole week. I missed two computing lessons. It did not affect me that much because I could still follow from the notes. No, it helped me, it helped me." (T16:1)

As in the case of the previous category, the student is 'less stressed' and 'more relaxed' with the availability of the learning material online. But in simultaneously foregrounding learning as individual self-managed activity and the learning objectives the student aligning to this category attends to the proposed challenge:

"You used to give us the notes, you know. And that study plan, you know. Then, hmm, you try to work from there. I mean, listen, at times you stray a bit here and there because – listen, sometimes people take it a bit for granted: Oh yes there are the notes there, I'll read them later on, I will do it later, they are on the computer." (T10:1)

"It was different from normal teaching where it's all done in the classroom. At least that you can do it whenever you want really at home. The problem that I see was that if you didn't want to, you can just not do anything really so you had to make yourself go on and do the work" (T23:1)

The structure and organisation of resources and proposed 'homework' is discerned as distinct from how teaching is normally done, and, in simultaneity with developing awareness of learning control and learning objectives, the student considers it all as supportive for learning:

"Because what's good about it is that you are opening it week by week, as when in the lesson covering a unit and then giving time to the student to go home and review the unit. Then the following week you do another unit. So what's good about it is that (learning) is in piecewise construction different than buying a full pack of notes, and having that pack, you start studying, then only God knows when you finish it. The way I see it, by opening everything one week at a time you are guiding the students better. Say, I have three pages of notes. Psychologically I think it works better to spread out the work. And it appears less daunting because you are not seeing it all at once." (T17:1)

"No it was good because you used to give us worksheets with the course-notes. That used to help me much more because you have everything all together, on a single website, on my laptop. Like having the notes at hand on the laptop helps even because of the loss of paper otherwise. I found it accomodating to have everything on them. I knew I had everything. Like, the questions you used to set us were very much aligned to those course-notes. So it was easy for me to answer them. And you know what you're saying in how you answer it though you have to rephrase the wording from what you used to give us. Hence you can follow better." (T4:4)

> "I was always a bit late on doing the homework but I always managed to do it. We had enough time. You gave us enough time for it. No it was quite fun as it were. The type of questions, I remember those that we had to do on the computer." (T5:1)

Interpreting the NL proposition as the requirement to learn the target subject content on your own and in your own time, the student attends to what s/he sees as the essential learning activities to achieve it. In an encompassing educational environment where the traditional lecture approach is the assumed teaching and learning method, the student reasonably focuses on going through what are recognised as the necessary and sufficient learning tasks of going through the course-notes and the tutorial questions:

> "[I focused] Mostly on doing the worksheets ... And using the notes in case I got stuck in the worksheets" (T23:2)

> "I found it easier to learn and write in the sense that you have everything there, you don't have to search through the notes which are – concrete, which you wrote by hand – I found it easier to open another Tab. It is all there, you say come on then search for it there. Different than trying to search within the notes [which you wrote on paper], books and henceforth to answer questions. You have everything in one place. I found it more [useful]." (T27:2)

Interpreting NL as self-controlled learning in isolation of others, the student is naturally concerned about the supportive elements of the course including teacher support and problems related to the management of learning:

> "Listen, I couldn't plan my work very very very well because of other subjects. But I think it was helpful because even if I'm somewhere else away from home. Even if I'm simply visiting friends. If I find some time to spare I may decide to spend half an hour on it. Like this I do the assignments. I used to know what's coming." (T4:1) ... "Listen, the drawback is that assignments are coming out all the time. It's worrying. But to a certain extent better because – let me refer to another subject, Maltese, for example. The subject doesn't have anything to do with it as such but there you are given an assignment once a term or whatever ... Computing is subdivided into three groups but at the same time as if a single group because,

I don't know, at times I have an assignment from this teacher, or the other, or the other, all in the same thing. So, I don't know, if I decide on studying Computing today, I'm going to get everything done. I do all there is to do. Like, you read the notes, you have the coursework. Then I work them out ... But you quickly do the assignments like this. You learn much more." (T4:6)

"*I* personally don't mind it, because I like it. Sometimes like I said I would like, in the class, to confirm because I like reading notes at home. And in class, yes, I need confirmation of what I need to know ... even if you just got the paper notes in class and you asked us like 'did you understand input and output devices?' I know that it is a bit babyish. Okay I need to study it but, would I need to study it all? So maybe if you outlined the most important bits." (T13:3)

"When I come to school I don't expect to be again sitting at the computer. I come to talk to the teacher, to listen to the teacher teaching me not the computer teaching me. For this reason I prefer face-to-face." (T8:1)

As may be observed in the above quotations variation emanates within the category on the perceived learning support on the part of the teacher. That is, in experiencing NL as an individual self-managed online learning system, the students may feel that they are being led to become independent learners but likewise may feel that they are being neglected by the teacher rather than supported in their learning. In this sense the student of this category may be found troubled and anxious rather than relaxed:

"In the sense that if (the student) comes across some difficulty you first let us struggle on our own and then if we (still) have a problem we look you up." (T9:6)

"The BCP is practically a book, a big book incorporating many books and which instigates you to – alright I'm studying on the BCP course instead of studying from a paper. As such that's not too bad except for the physical (strain) on your back and eyes. But if I'm coming to the extreme case that the teacher talks to me from within the BCP, or I learn only through the BCP then there arise situations which are going to make me feel ignored because I won't be

able to ask the teacher a question. I'm not going to have the teacher's opinion. I'm going to have the permanent opinion of the BCP. I cannot discuss things with you. I cannot discuss it with the notes. The notes are and remain as they are." (T8:5/6)

Experiencing NL as an individual self-managed online learning course spread across a limited number of weeks and distinct from customary teaching and learning methods, the student discerns it as a proposal to obtain just-in-case experience for future work and study:

"I gained *per ezempju* [for example] an insight of how things are done abroad because my cousin he goes to **** (University), he's in engineering and *maghhom* [with them] it's all online mostly so he doesn't need to necessarily attend the lectures as such but in my case I had to attend the lectures. But at home I don't do as much work as I explained before *dik* [beforehand]... No the experience served me for later on in life because I'm sure like for example in my father's company and my mother's side company they work online mostly so work is distributed through email for example. So they work online. It's not that I come to you and I tell you to do these accounts for tomorrow. It's more computer integrated like we are nowadays. So it's beneficial for us to know how things work today." (T5:3/4)

When experiencing NL as a self-study online course of learning, if in difficulty the student seeks help from the sources s/he trusts: those few close trusted friends and the teacher, how he/she knows best:

"When I get stuck I check out the notes, or check it out with my friends. There was **** then. Em, or I ask you in class. It was – I repeat, I found it worked better for me than the classes of the first term. That is, it was organised. That's how I saw it." (T16:1)

"<But then, what did you focus on?>
Mostly on doing the worksheets
<*On doing the worksheets*>
And using the notes in case I got stuck in the worksheets
<*And you used to do that on your own or did you prefer to do it with others?*>
On my own

<*On your own. So you always worked on your own?*>

Yes

<*And when you have problems what do you do?*>

I search online" (T23:2)

In aligning to this category students seek to establish their own way of learning, whether it is at home in isolation of others, or maybe with those few trusted friends behind the scenes:

> "I print and file everything. I prefer an old fashioned filing system. On the computer at times its Facebook, at times here, at times there <soft laugh> hence when I'm going to study I prefer a hard copy." (T15:2)

> "I used to do the homework with my friends. And with you because as I said if we were doing the homework (in class) and you were there I would ask you there and then. I didn't have to wait for the next lesson to do so. I'm not going to interrupt you from the lesson to ask you a question. I found it more convenient like this because with the notes which you used to give us and the way you set them out for us we could follow one step at a time without problems ... hence we used to sit near each other doing the same work, working out the same questions on the computer or writing them out by hand. If she had a problem she would ask me. If I had a problem I ask her." (T5:4)

As the above two quotations illustrate, in variation within this category the student may be found adopting different strategies to cope with learning contemplated as a self-managed individual enterprise. Whereas one student may feel more comfortable going about the individual learning endeavour in total isolation from others, another student may find comfort and support going about his/her individual learning tasks in the company of close friends working on the same tasks. Thus, even if learning is advanced as an individual enterprise, the student aligning to this category may be found interacting with others for learning purposes, but as aforementioned, online or offline, this is in private spaces with a few trusted friends and/or the teacher. Within the category, variation exists in

what appears to be the value-added of others on the same course of learning. Whatever the case there is always the assumption that other students are concentrating on their *own* study-work the same as you do. As in the case of the previous category, online activities and interactivity with others are discerned as *extra* work in relation to targetted learning objectives. Students aligning to this category hold on to an individualistic notion of learning, and in the formal learning environment interpret this as reading through the teacher's course-notes and working through the worksheets on their own for reaching learning objectives as exemplified by several of the above quotations.

Awareness of assessment linked to online participation may persuade the student to take part in online group activities, but this is minimal and in a detached manner singularly aimed at accumulating grade points (T10, T23):

> "Basically I contributed to the wiki just because it was required for the assessment. Besides that I didn't see the need to do it" (T23:3)

In view of what is being recognised by the student – an individual self-managed course of learning – participation in online activities is driven only by the desire to accumulate assessment marks. Hence there is the chance that a student aligning to this way of NL experiencing participates in online collaborative activities carelessly only to be interpreted by other students who align to higher level categories as - "ta' kaf-kaf" [*carelessly*] (T17:6) and "just biex ikunu tefghu l-affarijiet" [for the sake of *posting (requested) items]*" (T18:3). Careful consideration of the distribution of assessment marks may have the student decide against participation, especially if the student reasons that marks lost from non-participation do not impact the overall grade (for pulling through the programme of study) in any significant way.

In summary, the student who aligns to this category of description is not only aware of the online availability of learning materials and the flexibility to access them as in the case of the previous category. But, the student now is also discerning the organisation and presentation of these resources. This leads the

student to experience NL as a self-managed online learning system forcing students to manage their own learning as individual stand-alone learners. If the student copes well with this self-managed learning the student feels relaxed and not stressed, while a student who struggles is worried and anxious.

In limited awareness of what is being proposed by the NL online course, the student adheres to what is recognised as expert instruction choosing to engage in learning activities which are seen as essential to achieve learning goals, and desired assessment. Hence for a student aligning to this category and used to a traditional teaching and learning approach – as the case of this study – accessing learning resources, reading through the course-notes and working out the tutorial problems is considered as the necessary and sufficient learning activity for learning what has to be learnt.

The limited awareness may lead the student to consider NL as an end rather than a means for learning. That is, the student discerns it as a proposal to obtain just-in-case experience for future work and study.

Different from the case of the earlier category, the authoritarian teacher is not seen as absent now but is recognised as purposely holding back to permit the students to learn to manage and control their own learning, whether this is appreciated by the student or not. The teacher remains as a reference point for students to answer difficulties when students cannot somehow manage on their own. Outside the formal learning setting the student may or may not have a small group of trusted friends to consult with when learning difficulties and queries arise. As in the case of the previous category, NL experiencing remains an individual learning experience, even if not necessarily in aloneness when considering peer consultation outside the formal learning setting in a private closed groups of friends, which is “run of the mill” behaviour for students who study the same subject and know each other well. By this description of NL experiencing, I am reminded of Lapointe & Reisetter’s (2008) work exploring graduate students’ perceptions of learning using networked technologies. They report that some of their students valued the online learning attitude in as much as it provided learning flexibility but then did not find much learning value in the

online group processes. Furthermore, they observed students creating their own learning groups outside the formal learning setting.

In conclusion, different from the student of the previous category, a student aligning to this category of description is now positioning himself/herself as in parallel to others on the same online learning course experience.

5.2.2.3 Category 3

Experiencing NL as using the Internet for learning in connectivity with others

In aligning to this category the student attends to online research, sharing and exchanges with others for personal learning benefit. In doing so the student focuses on the validity and reliability of the information which is generated among students and how the online activities and interactivities serve his/her learning, simultaneously attending to the availability of teacher's resources online and the learning control in the hands of the student.

NL experiencing is discerned as a proposition to online activity and interactivity with others for learning beyond expert provision. In discerning the personal learning gain in online activity and interactivity the student attends to online research, sharing and exchanges with others, hence the proposed disruptive use of the Internet for learning in the formal context:

> "When it came to studying, you have the notes, what your peers said, the research that you did. Basically we were doing all sorts of things there." (T28:1)

Now the student is not hung up on the course-notes and assignments provided by the expert. Different from the case of earlier categories, there is not a total dependency on expert provision and direction for seeking out sources and resources (including human resources):

> "Em, for example you see from where you have to get certain information. How to download more notes. You start to get used to it ... Earlier I used to depend on the teacher's notes. Now I search on the Internet, books." (T9:7)

Aligning to this category, students consider themselves as part of the learning system. The students are now compelled to go beyond expert provision through the use of the Internet:

> "So personally I enjoyed how it was done, the subjects that we were given, and how it was given to us but it was more like – if you want to learn you can. You're *free* to do research and you're free to add more on top of what you know. You're encouraged like. That's how I see it" (T6:6)

> "What you can say is that, eh, maybe earlier I was not very keen on asking others about my problems – even at the time I was not asking them much. But you learn what a convenient system it is because you post a message and you receive many different answers. Perhaps not all of them agree. But all give you their opinion, what they think. Then you reach your own conclusions. Hence, the sharing of resources and difficulties of your peers help you because the fact that you answer it helps you and also helps them as well." (T2:2/3)

Attending to what is perceived as an invitation to actively seek out learning using the Internet the student sees the personal learning gain from connectivity – with human as well as non-human others, for learning:

> "But so long as I don't have problems I don't search [for it]. Then, if I have a problem on something, I log on to see what others wrote. I log in. I see what others wrote. Let's say there is someone who asked about it and he had a response, I try to understand it. That's why I think that it is more useful."
>
> <*That's how you found it useful...*>
>
> "Yes that's how it was with me. That's how I found it useful. Accessing the conversations of others. I see what problems they used to have." (T21:5)

Apart from the benefit of online research to accumulate information and learning resources, the student aligning to this category also sees learning embedded in the online sharing and exchanges with other students. There is discernment of the learning value in online interactivity among peers including a sense of

reliance and security in the system. This is differentiated from learning in isolation from others as in the case of the previous two categories:

> "The fact that, for example, other students are posting their research and then you read it, you get an idea where you stand in your learning in relation to the class. Like, you say to yourself 'Oh look, I did not know this'. Or 'Look at that! This is a good piece of research'. Or, 'Look from which website she got this! I use it as well'. Like, you learn from your class-mates as well. You learn from that which is correct, and you also learn from mistakes. There was an occasion when someone – I can't remember. But there might be someone who does make a mistake and you draw their attention to it. But you learn from the good and the bad of other students." (T28:3/4)

> "Because earlier you were doing the homework on your own, necessarily on your own and at home. Then after the correction you can compare it (with that of others). Okay, there weren't much doing it. But like this, we are online, and we are communicating using FB. There is more communication. For example, if there is something I don't know and there is something he doesn't know, we can help each other with the homework. And, say, he can give me one thing and I give him another. It's more flexible like this than at home on your own." (T3:5)

> "As I told you, I had a certain reliability on it. Communication. It is a much better way of working than the normal system."
> <*What do you mean when you say reliability?*>
> "Because I have people around me. That is when I'm logging on to the system there are people there who can help me. There is a certain security and the like." (T7:2/3)

In awareness of the added value in connectivity with others for learning, the student aligning to this category follows the online exchanges and conversations as they develop, because others' contributions are now seen as another learning source:

> "Because effectively those were my notes. That is our syllabus. To learn I had to read what others said and even towards the end before the exam, when it came to studying I wrote my

notes on what they said. Not during the year. But what others said was important, even for me in general and for the exam as well." (T32:1)

Experiencing NL in this way, students may be found appreciating email alerts notifying them of new activity on the course-site (T2:1):

"Em, but then there was this feature wherein each time someone posted something and you're subscribed to that forum you're sent a message. I found that helpful." (T2:2)

Experiencing NL in this way a student may turn very critical on online contributions because the student is now aware that other students' activity and interactivity affects *his/her* learning:

"Not everyone takes the same approach. Say, you used to tell us that we score extra marks with participation. There were some who participated only for the marks, like carelessly posting some answer and that's it. This was not fair on those who took their work seriously, researched well before writing, and writing it in their own words. Because it's worth mentioning that there were some who directly copied [sources] as happens with assignments and the like. And secondly, it is not fair on those who later want to study from them." (T17:6)

In experiencing NL as the use of the Internet to learn in connectivity with others, students attend to the value added in that they are no longer solely dependent on the teacher and a closed group of trusted friends 'in hiding', away from the formal learning environment to support their learning, as in the case of the previous categories. Students aligning to this category discern learning in connectivity with human and non-human others as a more efficient strategy to support their personal learning than insisting on individual learning as dictated by the teacher:

"Because the thing is, you find this site where everyone is talking about each other's difficulties. Like this, wherever the student is encouraged to ask there about their difficulties. As in, you even feel more at ease to post a question. For example there were other students of my class – as in, you don't have the same friendly relations with everyone, but it does not matter while working with them there. You are encouraged to talk to others [on learning] and the like. You don't consider who he is or who she is." (T24:4)

> "Certain problems you get over them more quickly because you are discussing them online. It's as if you are making the process go faster, and it works out better because then you have more time for revision ... It's going to help you because apart from the fact that you are not tied to the classroom [lecture], it's like you are in a community discussing the subject, and problem solving together." (T24:2/3)

Awareness of the learning gain from online activity and interactivity encourages the student to participate in online activities and to keep in line with other students in learning. Different from students of previous categories, who consider others not having anything to do with personal learning, the student sees gain in connecting with other students for learning. The visibility of other students' online activity and interactivity also serves to assess where you stand, and also as a motivation to participate in online collaborative activities:

> "The e-learning system permitted me to know where I stand [in learning]." (T7:3)

> "There were some people who always made their contribution. Even in research (activities) you could see that they were always among the first to submit their research ... There were times when I used to say "Oh my! They already answered them'. You say 'Next time I will pay attention so that when it opens I'm one of the first to answer'. There was also this thing that you say 'Look, they already –'. You try to challenge yourself to always keep up to speed with the class, not always falling behind, always, say, not doing the homework, never doing any research. So, maybe in competition, but for me ... I need to keep in line with the class because I know that there are others ahead and they are always posting their work, they post their research, and so I think in that sense as well." (T28:6/7)

In awareness of added value in connectivity with human and non-human others, the student feels pressured to put in more effort and keep up the pace with other students so that s/he is not cut off from the other students of the learning group. Such feeling is different than being 'less stressed' and 'more relaxed' in awareness that learning resources are flexibly available online, and concern

about learning control in the hands of the student, as was the case with the earlier categories:

> "I used to say [to myself], 'It looks like this one knows it. This means that he studied it well, and therefore best to study it as well'. Because if other students know the answer to a question and you don't know it, it means that it's not a question that we still haven't covered it but that you have fallen behind. And this means that you need to study more ... because if you feel that there is something which others know but you do not know, it means that you are lagging behind. It means you need to study harder ... We all keep pace with each other." (T20:5)

Whereas the student of the preceding category may feel obliged to participate in online activities in realisation of linked assessment and hence focuses on accumulating grade points, the student aligning to this category is motivated to participate in online learning activities to increase personal learning and hence keep up with others in his/her learning.

In summary, the student aligning to this way of experiencing NL is aware of the added value of internetworking not only for conveniently accessing teacher's resources. This way of experiencing NL incorporates a sense of freedom in learning for the student. The student aligning to this category uses the online medium to go beyond provision through online research effort and through connectivity with resources and with peers sharing and exchanging information and resources. The teacher is sought to quality assure exchanges and explain things when the students cannot understand and solve problems on their own. This view denotes a shift in focus from the degree of teacher strictness and the degree of learning control in the hands of the student. The focus is set on the use of the internet to tap into human and non-human resources for personal learning gain. By this description of NL experiencing I am reminded of Bradley & McConnell's (2008) concluding comments on their interpretative research work investigating the experience of a heterogeneous group of students (whose ages ranged between 18 and 60+). They remark that in general students exhibited

individualism rather than *community* in learning together online despite the NL attitude proposed through course design and tutoring. Nevertheless, in aligning to this category the student is advanced as not only discerning the use of the Internet for learning to be delivered to him/her, but also the use of the Internet is discerned as encouraging the student to seek out the learning. The student hence is shifted from being in expectation of provision (from the expert teacher) standing on the outside of the learning system, as in the case of the previous two categories, to becoming part of a learning system. Even if in contrast to the next category, students aligning to this category of description remain focused on personal learning gain.

5.2.2.4 Category 4

Experiencing NL as using the Internet for learning in community with others

The student of this category foregrounds online learning activity and interactivity engaging with resources and with human others as each playing a part in others' learning.

The student of this category simultaneously attends to the availability of course learning materials and resources online, the flexibility to engage in course learning activities as controlled by the student, the online sharing and exchanges among students and tutors to support personal learning, and the online learning activity and interactivity among students and tutor to support each other's learning, and hence a sense of responsibility not only for personal learning but also for the learning of others.

The student of this category focuses on the use of the Internet for learning together with others. Learning is taken outside the confines of traditional learning as a more democratic approach. The student sees students' learning as participating in an online learning community:

"This [system] helps because apart from the fact that you are not in a classroom, it is like being in a community wherein we are discussing the subject, and solving problems between us." (T24:3)

"It was something good from which I learnt a lot. You have others, like me, the same age. We write things differently and we learn from each other. We can ask other students questions. We can answer each other there and then." (T18:1)

In experiencing NL as the use of the Internet to learn in community with others, the student advances an awareness of the social aspect to learning. Learning together inevitably involves the development of social relations:

"Look I think the computing class students came closer to each other. We got to know each other through the e-learning [experience]. Even during the lesson we used to be all [logged] on Moodle and we used to talk to each other as in how do you do this and that. Personally that was the time when I mostly came to know other classmates. I mean that is the big advantage of e-learning as I saw it. As in who are my classmates." (T32:2/3)

"No I think it was a very good experience. I really enjoyed it. I learnt. It was a new experience which I never had before in my life. As I already told you I recommend it both for secondary [school children] because it is something – even you become an integral part of the community, your classmates and the like. You make more friends. For example, you asked a question. I answer you. [Like this] a certain friendship grows among peers." (T18:4)

In experiencing NL as the use of the Internet to learn in community with others the student experiences a sense of acceptance and belonging. In participation the student feels part of a learning group:

"I'm always going to learn some new things, and that's what's best for me. Em, the fact that you are free to give your opinion to others. They are going to listen to you. And they're going to tell you if they don't agree. They're going to help you to improve [in your learning]. And even that there are other people who accept your opinion. That helps as well. You are going

to do research. And with that research you are going to help others. That [connectedness] really helped me." (T35:5)

Experiencing NL as the use of the Internet to learn in community with others, the student projects concern for others' learning as well as her own:

"I could be talking to the teacher there. And he could give me all the help there even post me notes and the like. There's the email ok, but, say [like that] others who have the same problem cannot follow. In fact that's what happened. I had a problem and I managed to follow ... he [the teacher] could help others as well. Everybody learnt from it because others had the same problem." (T35:2)

"I found it good because if I learnt one thing and he [another student] learnt another thing and we are doing the same topic, and his [interpretation] is correct but is a bit lacking. He is going to learn as well when the teacher corrects me. If he was thinking that he got it right, the teacher is going to correct it. And hence like this things can be done better." (T24:3)

This concern (with others' learning as well as personal learning) delineates this experiencing of NL from the preceeding category, wherein this technology-mediated learning approach is understood as connectivity for learning but the social aspect of learning is considered from an idiosyncratic learning gain perspective. In their online learning activity students aligning to this fourth category of description consider others' learning as well as their own:

"I mean, when it comes to amendments – to add our comments, apart from writing something which hasn't been written, you come across some mistake you amend it. You go into editing mode and amend it. If you see some missing punctuation you try to make it better so that whoever comes in after you can understand it better." (T32:2)

Aligning to this category the student focuses on the benefit of cooperating and collaborating with other students as a group to co-construct more than a strict subdivision of labour as in the case of the previous category:

"It was good. I did not find any particular problem. It was easy. We just do the research and upload it as in the case when we had to find input devices *u hekk [and the like]*. It was easier than collecting everything like it was – ... the topic was building between every single person. I think so. We built it together not just the teacher gave us the lesson as such. More we worked as a group that learnt together like" (T6:3)

"We had to do that presentation if I remember well ... for example we had to do four slides. Say, first we decided on a topic. Let's say we chose to do it on viruses. We all took up doing research. We set ourselves a limit of say three images each. We had the research which each one of us did. We had 150 words. We then put them together. Say, we had five slides, a slide for each different theme. You always have that page, and if we are four students each added a part. Because, say that which I couldn't find on the Internet there might be someone else who has a better [source] website and he finds [more information than I did]. So then we put it all together. Then obviously we make it as nice as possible and obviously present it. You upload it to show it to other students who worked on something different. They get to know more, even learn more." (T35:4)

Experiencing NL as learning in relation to human and non-human others the student critically acknowledges that another student's activity and interactivity affects the whole learning group:

"Sometimes it is not a combined effort like. It would be more of these selected people than the others. ... That bothers me because the thing is that the overall result will be less than what you should have as in – like someone sends the level behind. Due to these people there won't be a high standard and level of learning as such as when everything is done bit by bit by someone else and not by the whole entities done by the teacher and we just add on to it. ... It affects the outcome of everything like for everybody" (T6:5)

Experiencing NL as the use of the Internet for learning in relation to human and non-human others for this student means that the students take their learning to different spaces as deemed accommodating for all concerned:

"Let's take an example. Say, there is this person who has a problem and we cannot communicate in an open way. We always went to talk somewhere in private on Skype or something like that. We always talk about it [there]. Then we post back on the e-learning [site] that which we think is right ... So that we don't write extremely long paragraphs ... for example I do some research, we find a website and this whole chunk say. You don't know how you're going to say it to others. So you read it. It's easier to explain it to others in words rather than in writing. So what we did, even if it was a group call involving many people, [but] you could talk with them. Even students of other groups used to join in. That was really helpful ... say there was also an A-level [student] who helped me out ... there was always help to be found." (T35:8)

Experiencing NL as the use of the Internet to learn in community with others means the student attends to the different ways to keep up the connections with resources and other students beyond provision. The student engages in both small group learning activity outside the course setting (as in previous categories) and in the more open spaces of the online course. S/he sees the learning community (to which s/he belongs) taking the suggested learning activities to greater heights than course requirements for the learning of all the members of the group, reflecting a sense of responsibility towards others' learning as well as personal learning. For this student both individual and collaborative learning activities are important for learning.

Experiencing NL as the use of the Internet for learning in community with others, the student foregrounds the online learning discussions and engages in collaborative activity to problem-solve with others. In aligning to this category in NL experiencing, the student simultaneously attends to the online availability of the learning resources and the flexibility this provision permits – the course organisation incorporates a number of study blocks with suggested study routes both through each block and across the course – and the potential of the Internet as a source of information and a two-way communication medium for learning. More than the student aligning to the preceding category, the student now demonstrates a sense of responsibility in learning with others, that is the

responsibility of personal learning as well as the responsibility of other involved students.

Students of this category are aware that there may be some who do take the collaborative activities seriously but in their critique of peers' contributions they are more thoughtful and show greater empathy towards others than students aligned to the preceding category:

> "When students are producing the answers themselves, true that they can make some mistakes, but then there are other students who correct them, and all the students help out. That of the answers worked out well ... as if everybody giving their contribution." (T20:6/7)

> "I don't think that they (other students) are inventing that result which they're posting there. At times there were some who posted just for the sake of posting something and quickly do away with it, you know. There were some mistaken ones. But the majority [of the contributions] used to be very good. They used to include a lot of detail. But there used to be one or two who are careless in what they post." (T18:3)

In summary, this fourth category of description advances NL experiencing as the use of the Internet to learn through engagement with resources and other members of the learning group. The student aligning to this category appears to trascend 'networked individualism' to experiencing NL as an active member of a networked learning community.

5.2.3 Variation in experiencing NL in terms of shifting relations

The variation in experiencing NL is constituted by this research as a shift in how the student relates to learning with resources and others: from learning as a relation between the student and teacher for learning material (course-notes), to learning as a relation between the student and the learning resources overseen by the teacher, to learning as a relation between the student and others with the student as the focal constituent; to learning as a relation between the student and others with learning as the focal element. In Figure 5.2 I attempt to map out these shifting relations in a graphical representation.

In order, these illustrations of shifting relations embodying technology proficiency, learning proficiency and social proficiency (as outlined when discussing the referential and structural relationships) correspond to the categories of description. In order, they suggest increasingly powerful and empowering forms of technology-mediated learning. The most powerful view of experiencing NL that emerged from this investigation and is illustrated by Figure 5.2 (d) suggests NL experiencing as constituted of relations between the student and resources, the student and the teacher, and the student and other students, hence closing in on the conceptualisation of NL, though not quite so, as mapped out in chapter 2.

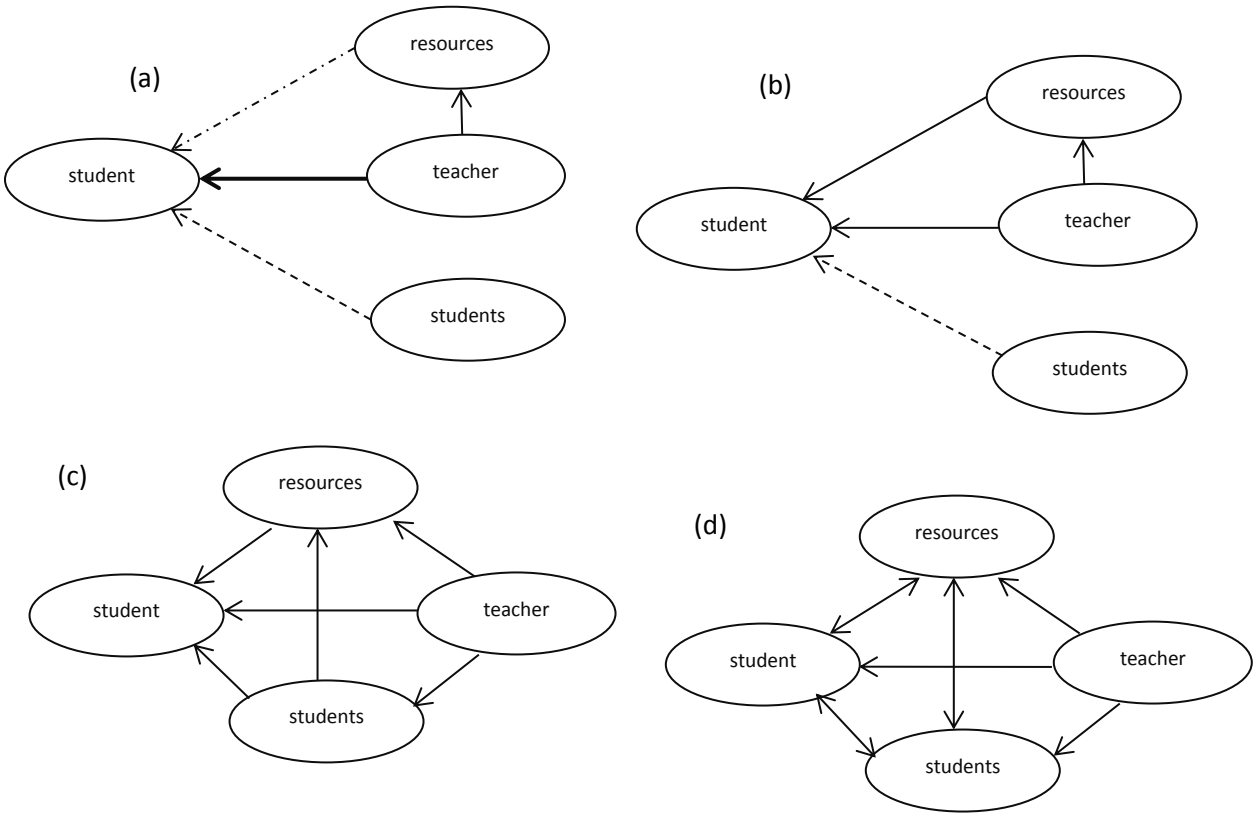


Figure 5.3: Variation in experiencing NL in terms of shifting relations

5.3 Section 2: Variation in the perception of others in experiencing NL

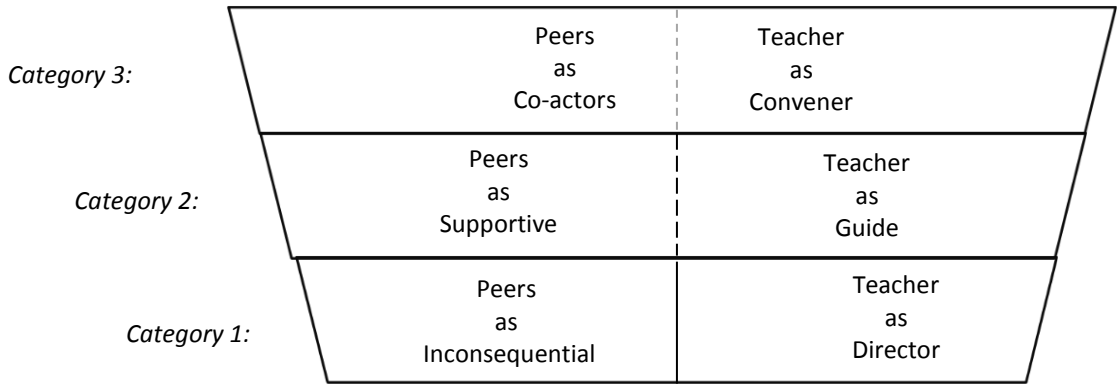


Figure 5.4: Outcome space – perceptions of teachers and students in experiencing NL

Further phenomenographic analysis on the generated data set of thirty-two transcripts revealed three qualitatively distinct ways how the student perceives others as contributors for their learning in the NL setting.

Constituted by this researcher from the participants' accounts, the different ways of perceiving others as contributors for their NL experiences incorporate the relations between the student and the teacher, and between the student and other students on the NL course:

- The first category denotes a view where other students are perceived to be indirectly contributing to learning; and complement the teacher as the source of learning.
- Inclusive of the first category, the second category denotes a view where other students are recognised as contributing directly to learning through the visibility of their online learning activity and interactivity, hence being a source for acquiring information, getting other perspectives, and answering difficulties; and complement the teacher who is recognised as the organiser and guide to students' learning by monitoring exchanges and explaining issues when students do not manage to sort them out between them.

- Inclusive of the second category, the third category denotes a view where other students are recognised as significant co-actors in learning reciprocally facilitating each other's learning through collaboration; and complement the teacher who is responsible for convening learning, also in being like another member of the learning group.

Although in their account participants generally consider other students and the teacher as separate entities, the participants' accounts reveal these two considerations as complementary, in that they come from opposite extremes towards convergence (as relations with other students and the teacher for learning deepen).

5.3.1 *Referential and structural relationships*

Referentially there is a development in perception of others as contributors to learning in NL experiencing going from:

- other students configuring in an indirect way, and the teacher as the explicit reference source for what there is to learn; to
- other students on the same learning course serving for accumulating and increasing learning, and the teacher organising and guiding the students' learning; to
- other students contributing by mutually facilitating each other's learning, and the teacher convening and facilitating learning like other students.

Structurally the student's perception expands from:

- foregrounding only the teacher figure as a source for obtaining learning material and directing students' learning; to
- also foregrounding other students as a learning resource through their (visible) online activity and interactivity and complementary to the teacher as guiding students' learning activities; to
- also foregrounding others as co-producers and co-creators in learning and complementary to the teacher as a leading member of the learning group.

With expanding awareness the perception of others as contributors to their experiences of NL evolves from a focus on the teacher as the means for what there is for learning and others as an indirect learning support means, to a focus on the teacher *and* other students as a means for learning – albeit the teacher's assistance is presumed superior and reliable in contrast to the contributions of other students which are suspiciously considered, to a focus on the teacher, other students (and evidently self) as a means for all students' learning by their online collaborations. Critical themes of expanding awareness are the role played by the teacher, the role played by other students (and apparently the role played by self).

Figure 5.4 is a graphical representation of the outcome space describing the different ways in which the student's perception of others as contributors to learning in NL experiencing is constituted. It is a logical structure forming a whole picture, albeit being generally open (Marton & Booth, 1997).

5.3.2 Categories of description: teacher and other students as contributors to the student's experience of NL

In this subsection I elaborate on each of the elicited categories of description. These categories are the result of a separate iterative process loosely interleaved with the other phenomenographic analysis effort of this research answering the first (overarching) research question.

5.3.2.1 Category 1

From participants' accounts, a student aligning to this category advances a one-to-one, one-way teacher-student relationship. In NL experiencing other students do not feature as direct contributors to the learning experience. There is an understanding of learning as an individual enterprise directed by the teacher. (In explicit denial or not), learning activity is considered to be the individual student's 'business' away from others.

In aligning to this category of description the student talks about engaging in learning activity in isolation (and possibly out of sync) from others, and all

learning activity revolving around what is provided and instructed by the teacher as the primary point of contact of all there is for learning. Behind the scenes, in private conversation, the student may be consulting with trusted close others to answer that occasional question that arises while studying, but in general it still remains that other students are not considered to be contributing in any direct way to personal learning experience, as the following extracts illustrate:

> "I don't think that the presence of other students is going to make any difference for me. Their presence is not going to effect my learning." (T8:9)

> "Because I feel that I only have to log in, do my work and that's it. Others can do the same. They can do whatever they like. It goes like that, you know." (T26:5)

> "Normally I don't work with others ... I do all my work alone and don't really ask to the others about it. We all done it" (T23:4)

> "First I used to read the notes, print them out at home, highlight the important items and bring everything together ... Then we used to have the homework. Where I got stuck I used to check the notes, or check it out with my classmates. At the time there was Peter. Or, I ask you during class time." (T16:1)

> "Like everything else I used to work a lot with Mark ... if a piece of work comes up for me, I turn to him with 'How do I do this Mark?' At times he logged on Jclite and told me, 'Look, here it is. When you go home read from here.' That's a good thing. Then, at times, when I came across a problem ... he even helped me by email ... I mean friends can be helpful. I'm friends with some but if I have to ask for help I'm going to ask Mark because he – I know that he will help me." (T22:5)

> "Maybe, if we are sitting near each other in the library or somewhere else doing a worksheet or some homework then yes. I mean like this we do help each other at times. But then we are not going to be sharing that over and above, extra *extra* to the homework. We never did that." (T26:5)

> "My best friend was Tina. Like me she was laid back and hardly studied. That's what I can say. Maybe if I was friends with someone who used the (e-learning) system, maybe I would have used it myself. But – even Matthew, both of them failed to be promoted to second year. At least I passed ... I think we were a bad influence to each other." (T30: 5/6)

As this last quotation illustrates, if anything, other students are perceived to contribute to the student's learning in an indirect way, but not direct contributors to learning. Significant to note as well is the negative (rather than positive) contribution signalled by this quotation. In contrast, the teacher is perceived as the director of all learning. Participants talk about the teacher as the provider of the online learning resources, particularly the course-notes and the worksheets, and the teacher as a point of contact.

In perceiving the teacher as the director of all there is to learn it is difficult for the student to reconcile the backstage act of the teacher. A cautious student accepts it unquestioningly as the "teacher's method", but in variation the student aligning to this category may turn very critical of the teacher who is not fulfilling expectations. The following excerpts from students' accounts illustrate the different degrees of objection:

> "I mean it's your – it's the teacher's method. I shouldn't interfere with what they're doing. I will – I do – I almost always give feedback but this was on the vle so I wanted to see how you were doing – how it was coming out" (T13:6)

> "Because if beforehand you used to give us the HW in class, and correct it in class, and did everything in class. Now we don't have so, all that time, because now everything is available through the vle. But I don't think that it is a bad thing because – I mean it is always important that the teacher gives you that lecture but that's as far as it goes. Say, HW is going to be uploaded on the vle just the same ... I don't think you lose anything because you still spend time with the lecturer. I don't think you lose anything. No I don't think so." (T3:6/7)

"It is the teacher who drives me. The teacher destroys me and sustains me. It is the teacher who makes me love the subject. This means anything to me. I enjoy it. I look forward to the lesson with him (teacher). But with the vle, he (the teacher) is virtual." (T8:7)

"But, as I always told you. During the lesson you (the teacher) should retain your traditional role. You understand it? Possibly there still is – not all subject (learning) on the computer. It's as if – you need to stick to your role. That one hour once a week is not going to do (you) much difference. That's how we should work. Yes, that's how we should work." (T12:9)

"The teacher has to be strict with me to make me hand in assignments on time. Listen, a computer is not going to shout at me." (T8:6)

"When I come to school I don't expect to be again sitting at the computer. I come to talk to the teacher, to listen to the teacher teaching me not the computer teaching me. For this reason I prefer face-to-face (learning)." (T8:1)

Summarising, it is difficult for a student who perceives the teacher as the source of all learning to reconcile the non-central role the teacher assumes in the NL setting, because the student is not foregrounding the supportive role of other students contributing to his/her learning in the NL setting. This is in distinction to perceptions held by students aligning to the other two categories of description. This perception does not leave much space for students to be considered as contributors to each other's learning, even if in private spaces other students are generally projected as a point of contact alternative to the teacher.

5.3.2.2 Category 2

From the participants' accounts, this category of description has the student focusing on the student-teacher relation *and* the student-student relation. Other students are recognised as contributors to the student's learning by way of their visibility engaged in online learning activity and interactivity. Different than the case of the previous category there is recognition of other students' online

participation in learning activities contributing towards personal learning: they are a source for accumulating information and/or obtaining pointers to sources of information; they are a reference point for asking questions when encountering a difficulty such as a problem the student cannot solve or obtain an explanation of some detail in the course-notes which the student cannot understand; and a way of obtaining new perspectives to the subject content, even in the way the student expresses himself/herself. Following are a number of quotations illustrating this perception of other students as a support to personal learning:

> "Personally I mostly looked at the answers [wiki contribution of other students] to obtain an alternative way of expressing myself. At times I revised and extended my work ... I revised my own work not what there was online. There were items which I left out, obviously because they did not occur to me. In that respect it was good ... indirectly [other students] helped a lot." (T25:12)

> "I found it easier for me even to study. You understand better.
> <*Understand better ...*>
> No, because – how am I going to explain this to you – the notes are online. Then at the same time you get to see the questions of others. The information they uploaded. Like this you have it all." (T9:4)

> "I mean when it came to my study-work I had what others uploaded, the research which other students did. So, you are getting different perspectives, you are getting different things, not always studying from your own research. Say, we did inputs and outputs. I studied from his research and from her research. I'm studying from different perspectives. And then you are putting everything together." (T28:4)

> "The fact that I could see what others are doing, and not repeating the mistakes of others. Even you used to send emails – you could have done this, you did this well. Then I started to check the emails which you sent to others and then try to do my work ... we worked in a team. What I did was different than what others were doing and viceversa. So the mistakes I

did were on one part of the work. On the other part of the work it was my (team) mate who made the mistake. So I check that out." (T4:4)

"You get the perspectives of others. Em, where you get stuck you could – if I remember well you had a discussion area. So others could help you out ... you are finding your peers helping you and you helping them ... it helped me to learn more because the teacher explains using certain terminology. Peers of your age are going to explain it in their own words, using terms which we understand better." (T29:2)

"I mean you obtain the opinion of your classmates as well. If there is something which you don't know and he knows it, he's going to help me. And if at the end of the day he doesn't know something – something you're going to find him for sure – and you know it, you're going to help him out. You have the perspectives of all other students as well." (T15:5)

"We are doing the same things and we are working on the same things as well. I mean you see what others learnt, what you learnt, you put it all together and then the teacher checks that it is correct. On one occasion I had a problem as well and I talked to people whom I didn't know and I never met in my whole life." (T24:5)

In tandem with this foregrounding of the student-student relation, the teacher is perceived as a 'guide at the side', providing space for students to manage their own learning but still in acknowledgement of his/her superior positioning monitoring students' learning. This perception of the teacher encompasses the former perception in that the teacher is still acknowledged to be explaining things where and when necessary but the student aligning to this category of description now sees the teacher moving aside to let the students take the centre stage in learning. Hence the student is not complaining that the teacher is not living up to his/her role. Now the student insists on the teacher being ever-present online, and watching over students' online activity and interactivity. The student aligning to this category recognises other students contributing to personal learning by their research and by their contributions in discursive activities but this student is

not so confident seeing them "*jilgħabuha tat-teacher*" [playing the role of the teacher]. The following selection of data excerpts illustrates this perception. In particular, the last quotation exemplifies the shifting discernment of the teacher as a player in NL experiencing. It highlights the distinction of this perception of the teacher as a guide from the teacher as the source of all there is to learn in line with the previous category. Notable as well is the emphasis on the teacher's online presence hinting at a fear of teacher desertion:

> "I think even for you, from a teacher's point of you, the teacher can ensure that it is correct. You check it and make sure that it is correct" (T6: 3)

> "If this teacher is going to have access to all that it being said ... for example, I ask my classmates a question and they give me this answer, this answer, this answer, many possibilities of the answer ... the teacher can join in the conversation and say that "here you made a mistake" and possibly corrects many students all together, not one student, but simultaneously four or five students who are involved in that conversation.
> <*You mean that the teacher first lets the students talk ...*>
> Exactly. First she lets the students have their say, then at the end after the students have analysed the work the teacher is going to comment on it.
> <*You mean the teacher is there to see that the students ...*>
> So much for the good and the bad because let's say a student is doing well but is in doubt about his learning he is not going to move forward. Or, if it's not like that – you need to be certain of what you're doing. Obviously the teacher is not going to tell you rubbish." (T15:7)

> "With regards to the teacher I think that (online teacher) presence is most important. The type that she needs to be checking the website several times a day because there are discussions going on and the teacher has to review all that is going on. Because if the teacher does not log on and there is a mistake it is not going to be corrected." (T24:5)

> "Let me tell you, if you come across a problem ... you always find them on – I don't know. Suddenly, online I found them very helpful to answer problems.
> <*And how did you find them helpful? You say for problems ...*>

> Say, frequently we came across some difficulty here and there obviously. Say, on one occasion one helps the other, say, you give him a hint or a partial answer. On another occasion someone helps others, as in, it was a very good thing." (T7:3)
>
> "The importance of the teacher is diminished because, as I told you, on the Internet you find a lot of things, a huge amount of information at your fingertips, as much as you can afford to research. You have (information) on anything. True, as I told you, you don't know whether it is correct or not but I think the teacher lost in importance. The fact that there isn't that person whom I'm seeing and I have her in my head: This is my teacher, she is going to teach me. True knowledge does not have to come from her only ... There isn't that person who is going to give you the knowledge, who is a figure there whom I can ask questions directly to her face-to-face. In e-learning there is a whole lot of people, you can ask them. They can answer your question correctly. Or they can give you a wrong answer. At times they may play teacher ... the teacher can be anyone after all – they may have a solution to many of the questions but certain people play the Mr know-it-all, the very good one. It might be wrong. It might be that the answers are not correct or he simply did a copy-paste from somewhere else. Anyway, it is up to him if he wants to toil away." (T10:8)

In cases when students of this category involve themselves with others in online learning tasks there is projected a perception of division of labour or trading, as illustrated by some of the quotations above.

As aforementioned, this perception of others as a means to acquire knowledge and getting answers to problems prompts the student aligning to this category to critically consider other students' online contributions. This criticality distinguishes this student from the student of the previous category who acknowledges the online presence of others but dismisses online activity and interactivity as not her cup of tea in the formal learning environment. The student here is found stressing others' obligations towards his/her personal learning but, in contrast to a student aligning to the next category, shows no sign of personal responsibility towards others in learning. That is, in distinction from the previous category the student is now aware of others as contributors to her learning. That is, other students are a

means of acquiring information, getting other perspectives to subject content and answering questions, but s/he is not so much conscious or willing to likewise be a facilitator to others' learning. The teacher plays a complementary role and is perceived as contributing to students' learning by organising and guiding students' learning activities, coming into centre stage to explain issues which students cannot somehow sort out between them, and to assess exchanges. In all this the teacher is portrayed as a regulator of what is acquired for learning in the NL setting.

5.3.2.3 Category 3

From the participants' accounts this category of description has the student focusing on the student-teacher relation and the student-student relation, but different than the previous category, the two-way communication of relations is emphasised thus going beyond strict personal learning interest in relating to others for learning. The participants' accounts reveal a concern for others' learning as well as for personal learning. This aspect of relating to others qualitatively differentiates the perception of others in learning from the perception set out by the previous category, where others are perceived as a source of knowledge accumulating information, answering personal difficulties, and testing personal understanding when answering to the difficulties of others. In aligning to this category the student advances a sense of trust in the reciprocity of others to facilitate learning beyond personal gain within the learning group. Aligning to this category the student reveals a sense of belonging and of being accepted as a significant member of the learning group that is a valued contributor to the learning experience:

> "Even if you used to go through them I used to search other websites to find extra information and the like. At times you add something to the wiki answers. You always add more to the answers. Everyone working together basically ... Or if nobody has attempted an answer as yet I do it, or I find that small thing to add. For example it said mention two advantages and if someone else already mentioned two I mention another two. Hence there is more information available." (T1:2)

"Because, what I did not find on the Internet perhaps somebody else has this website which is better than mine, and he unearths more. Then we put everything together. Then obviously we pep it up to make it as presentable as possible and present it (to others). You upload it to show it to other students who did not work on the same task. They get to know more, even they get to learn more ... even the fact that you have that freedom, you are going to give your opinion to others, they are going to listen to you, if they disagree with you they are going to tell you. Where you can improve they're always going to help you. And ... and the fact that there are other people who accept your opinion helps as well. You are going to engage in research and with your help in doing research you are going to help others. And that really helped me." (T35:4/5)

"I could be talking to the teacher there and he could give me all the help there even post me notes and the like. There's the email ok but, say [like that] others who have the same problem cannot follow. In fact that's what happened. I had a problem and I managed to follow ... he [the teacher] could help others as well. Everybody learnt from it because the problem was not only mine." (T35:2)

"We ended up switching on – doing a Skype call together to work there, and to explain it to each other bit by bit. You need to – I mean for a person to access your computer so that she can see how you are working. Even the fact that another person helped me and I could help another person with that help. So there it was really – there were also some who understood better how the programme worked. And then with all the information we generated between us we could join up to help others." (T35:6)

Students, *including self*, are perceived to be contributing to each other's learning through co-production and collaboration to problem-solve and facilitate each other's understanding.

Correspondingly, the teacher is also trusted as convening learning in ways which accommodate the student and in ways which the student enjoys. This perception of the teacher in learning is distinct from that of the previous category wherein the teacher is upheld as needing to keep track of students' activity and interactivity

online to ensure reliability of exchanges. Beyond teacher's presence to increase trustworthiness of learning content co-generated, in aligning to this category a student perceives the teacher as 'part of my group of friends', 'like a participant in the group'. The teacher is trusted 'like a classmate', and banked on for 'constructive criticism' surely 'not going to say that the teacher will give me a poor assessment':

> "Listen, at that time, in e-learning obviously the teacher is someone who understands the subject more than you but during – even in e-learning you see him as one of your circle of friends because even in class you respect the teacher – wherever you go you are going to respect her as a teacher but even in e-learning the teacher is going down to your level, she is going to help you understand things your own way. You can consider them as your friends who are trying to help you understand the subject more, and how to get things working. This is how I consider the teacher in e-learning mostly." (T35:7)

> "Not exactly a friend, he is the teacher at the end of the day but more like another class participant." (T1:5)

> "More like a student who is more knowledgeable. You are more like a student's friend rather than a teacher because you want to choose things which (students) enjoy and are interactive not something like you have to do the homework. And there are positive connotations not negative ones." (T25:7)

> "Because (the teacher) is doing the same work as others, reviewing your work more like constructive criticism. Em, he posts on the forum telling you what you can change, adds to what you said rather than assessing you. You still gave us marks but they did not have the same weight and formality associated with them." (T25:8)

In aligning to this category the student sees participants (including other students, the teacher and himself/herself) facilitating learning in an empathic manner. This perception of others in learning is distinct from the idea of supporting each other's learning as a personal gain, either in consideration of online exchanges as a

trading enterprise or in consideration of personal gain in sharing and explaining it to others. In aligning to this category the student's perception of others as contributors to learning is advanced as *facilitation to learning* including all human players in the context of NL experiencing.

5.3.3 Positioning of teacher and other students in NL experiencing

From these categories of description constituted by this researcher from the participants' accounts it appears that although the teacher and other students are referenced separately, their positioning as learning contributors in NL experiencing is complementary – with growing awareness of the potential of other students and evidently of self to facilitate learning as well.

In consideration of the first category, the student considers the teacher as the *director* disseminating 'notes' and 'homework', and other students as an indirect influence to his/her learning experience. Both the teacher and other students are perceived as standing separate from his/her learning and both unavoidable in the formal learning setting albeit for different reasons: the teacher because with him/her stands all there is to learn, and other students because of the inescapable notion of classes and student groups as part of the institutional context. Additionally, both the teacher and other students are considered as a *point of contact* for occasional consultation; they are behind the scenes when the student finds that somehow s/he cannot resolve learning difficulties on his/her own. (The decision on whom to consult depends on the student's judgment of the severity of the learning difficulty, and his/her self-confidence in contacting others).

In consideration of the second category, the student perceives the teacher as a guide through the learning course and other students in a supportive role generating information, helping and extending understanding of issues. But both students and teacher are perceived as standing apart from the student's learning, as in the case of the previous category, however, in contrast to the previous category, both are now considered to be, to a greater or lesser extent, moving forward with him/her: the teacher as the "superior" other leading the way, and other students likewise are trying to "keep the pace". In general, others are a

source of accumulating more information and aid understanding in experiencing NL.

In consideration of the third category, the student perceives the teacher and other students as all having an integral part to play in learning, and he/she is part of others' learning as well. There is consciousness of the teacher and other students as an integral part of the learning experience. Even if the teacher is an authority "respected as a teacher" still others are a means for understanding and extending what there is to learn in learning, and he/she is, and is accepted as, a means of learning for others, or, as I highlighted earlier, a *facilitation to learning* in NL experiencing.

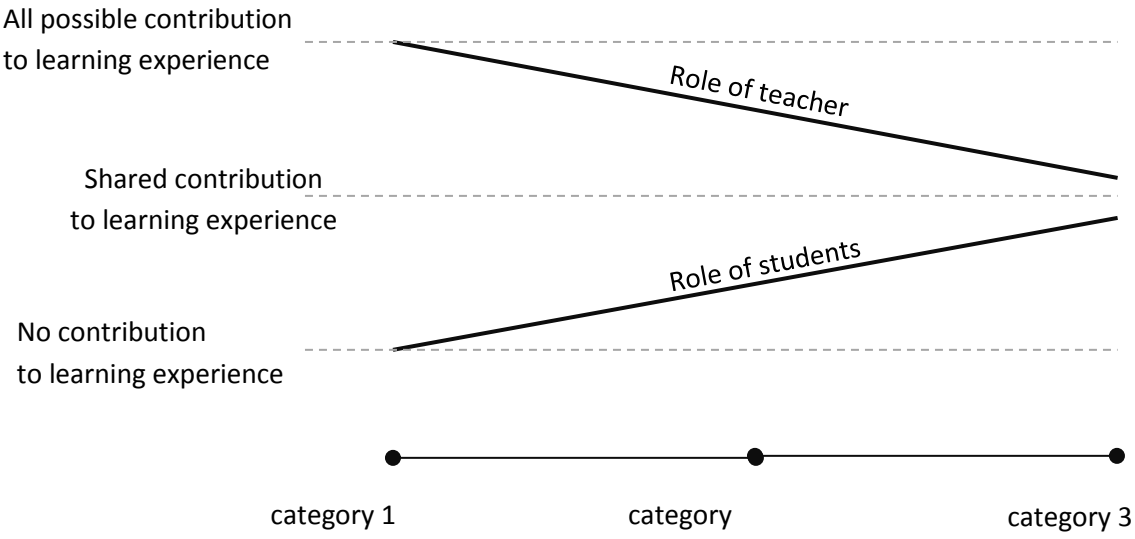


Figure 5.5: Expanding perception of teachers and other students

To summarise, in this study, variation in the post-secondary student's perception of *teachers and other students* as contributors to learning in the NL setting is captured in terms of a three distinct and hierarchically inclusive categories structured by the broadening awareness of all human constituents as significant sources of learning support by the roles played. In Figure 5.5 I try to capture the expanding perception of teachers and other students as contributors to learning

in the NL setting by a graphical representation highlighting the role of the teacher and the role of other students as critical themes of expanding awareness. Not shown in this representation is the self-positioning of the student on par with other students.

Conclusion

In this chapter I presented a detailed account of the outcomes of my phenomenographic research effort, which effort was explicitly described in chapter 4 based on the theoretical framework and the philosophical mind-set I outlined in chapter 3. In the remaining two chapters I discuss these findings and the overall research enterprise from which they arise.

These resultant descriptions – on the qualitative differences in Maltese post-compulsory pre-university students' accounts on NL experiencing and their perceptions of teachers and other students as contributors to their experiences of NL – depict the student's experience as an emergent progression of expanding awareness. These progressions are configured from the number of aspects of the NL approach the student focuses upon, or to put it in mathematical terms, *values on the critical dimensions of expanding awareness* (Marton & Booth, 1997). This portrayal is distinct from the paintings of the student's experience of learning using networked technologies as a composition of contrasts and conflicts. In the descriptions I present here the challenge of NL for the student is recognised, but these descriptions make explicit what the challenge is, that is, the shift in focus bringing in more and more aspects of the phenomenon simultaneously into focal awareness and relating them within the bounds of previous experience and present situational circumstances. In the next chapter I seek to set out these findings as a new contribution to knowledge in my discussion of them in relation to existing knowledge on the student's experience of NL.

Chapter 6: Rethinking the Students' Experience of NL

6.1 Introduction

In the previous chapter I presented the findings of my phenomenographic analysis, which led to two outcome spaces answering the two hierarchically inclusive research questions I set myself at the start of the study. The first outcome space presents a description of the variation in the post-compulsory pre-university students' lived experience of NL. The second outcome space provides a description of the variation in how the students perceive teachers and other students as contributors for learning *within* this NL experiencing. The two configurations are necessarily interlinked because they are descriptions of two hierarchically interrelated aspects of the same students' NL experience. In this study I do not stray from the adopted phenomenographic stance to map out this embeddedness, but the ties are sufficiently visible, especially in the detailed descriptions presented in the preceding chapter. In this chapter I seek to clarify what these findings add to current knowledge. I do this by setting them out against the background picture which emerged from the literature review of chapter 2. Thus I also present my argument for a change in our thinking about the student experience of learning using networked technologies as a mesh of contrasts and conflicts.

6.2 An alternative way for describing the student experience

This research advances an alternative way for describing the students' lived NL experience. This new alternative is distinct from portrayals of contrasts and conflicts advanced in published literature, and which I sought to call attention to in chapter 2.

6.2.1 A new way to view variation in the students' experiences of NL

Qualitative differences emerging from post-compulsory pre-university students' accounts on NL experiencing are described in this study as a continuum of

distinct ways of experiencing incited by foregrounded themes of expanding awareness. This configuration goes beyond the cause-and-effect observation of immediate experience construing students' different perceptions and experiences as "challenges emerging from the changed demands" and "contradicting understandings and needs between students" (Nicolajsen, 2014, p.160). These findings are a response to McConnell's (1998) appeal to move away from notions of good and bad experiences. NL experiencing is contemplated as an expansive view potentially serving better the NL theoretical standpoint (Cutajar, 2014) in its aspiration towards diversity and openness away from the tyranny of consensus (Hodgson & Reynolds, 2005, Ferreday & Hodgson, 2008, 2010). By considering lived NL experience as an emergent progression, contrasting and conflicting lived experiences are not denied. They are embraced. It is not a question of passing judgment in comparing one lived experience to another, or one category of experiencing to another. It is a question of locating lived experience within the emergent space of expanding awareness as a relational stance.

6.2.1.1 A situation-bounded temporal state

This viewpoint of NL experiencing moves away from first-person assessment of the student's lived experience leading to such preoccupations as the identification of enablers and disablers influencing the student's experiencing of learning using networked technologies. The non-dualist, second-order standpoint contemplating qualitative differences proposes the student's experiencing as a situation-bounded temporal state explainable by critical aspects of expanding awareness. It is not a question of what facilitates and what hinders a 'good' experience. It is a question of what aspects of the NL approach the experiencer is simultaneously focusing on. For the case of this study, it is a question of what the student is discerning of the NL approach within the confines of his/her past and present life and learning world. The viewpoint of NL experiencing I advance by this study is considered to even extend previous holistic studies investigating the students' experiences of learning using networked technologies. The qualitative differences in students' accounts of their NL experiences are configured by this research as

an inclusive hierarchy in realisation of the non-dualistic stand-point. In his research, Tsai (2009) reports Taiwanese students' conceptions of web-based learning as comprised of the three conceptualisations: "the web as an information resource for learning, the web for individual self-paced learning, and the web for more interactions and dialogues" (p.1101). The research I present here additionally emphasises the inclusivity property of the qualitative differences in conceptualisations. In distinction the qualitatively different ways of experiencing constituted by this research are recognised as related to each other by the common phenomenon, as suggested by seasoned phenomenographers (Bowden, 2005, Åkerlind, 2005a). Similar to Tsai's configuration, this research evidences the variation as a shift in understanding of the functional value of the online learning approach, but, beyond Tsai's work, it highlights the shift as an inclusive hierarchy mapping out qualitatively different ways of experiencing as a matter of expanding awareness. This is what Åkerlind (2008) refers to as the 'phenomenographic perspective' rather than the 'cognitivist perspective' whence "different conceptions are positioned as independent, even if they can be ordered in a continuum of development of sophistication" (p.635) and which Tsai (2009) appears to be assuming.

6.2.1.2 Broadening awareness

In acknowledgement of non-dualism and the supposition that qualitatively different ways of experiencing are finite (Marton & Booth, 1997; Bowden & Marton, 1998), this research structurally constitutes variation in terms of a finite set of critical themes of expanding awareness. This phenomenographic perspective of awareness takes the configuration advanced by this research study even beyond other phenomenographic studies investigating students' experiences of learning using networked technologies and which configure variation as an inclusive hierarchy (Ellis et al, 2006; Ellis et al., 2008). In this research, the student's NL experiencing is represented in terms of three critical dimensions of expanding awareness. This broadening awareness – increase of simultaneously discerned aspects of the phenomenon translated as increasing

values along the critical dimensions of expanding awareness – goes beyond the idea of inclusive hierarchy of specific and more elaborated conceptualisations and approaches. It is in the light of this broadening awareness that the student is recognised as moving from an outsider's attitude 'having experience' of an online learning system to an insider's attitude 'making experience' as an integral part of an online learning system. Through this portrayal of variation in the students' experiencing of NL as an emergent progression of expanding awareness, I argue for a different mind-set in our thinking about learning in the formal learning context. I suggest moving away from thinking that variation "helps teachers and students understand the range of *helpful* and *unhelpful* ways in which learning and knowledge can be thought about" and a question of aligning or failing to align to "some culturally valued knowledge practices" (Goodyear & Ellis, 2010, p.107, added italics). The understanding suggested by this study leads to a contemplation of all student experiences as legitimate possibilities akin to the viewpoint of "the good teacher" (Marton & Booth, 1997; Trigwell, 2006), and akin to the NL ideal, and towards the NL ideal.

6.2.2 A new way to view variation in the students' perceptions of teachers and other students

The outcome space portraying qualitative differences in the student's perception of human others as contributors for learning in this NL experiencing provides a way for making sense of the variation in the interpretation of others within the NL experiencing situation. In consideration of the inter-human relationship for learning, this work brings in the perception of teachers as distinct and paired with the perception of other students.

6.2.2.1 Deepening awareness of teachers and other students

The resulting representation forms a high level framework for describing the inter-human relationship for learning in the NL setting. In extended analytical structuring of the first outcome space presenting the whole act of NL experiencing, this is also proposed as an alternative way of understanding

seemingly contrasting and conflicting views of other students reported in the extant literature, such as the negative and positive views reported by McConnell (1998), the deeper and long-lasting learning experience contrasted with the alienating and isolating perspective advanced by Krüger (2006), and the superfluousness and inconvenience of human interactions as opposed to the strong value for learning perceived in them suggested by Lapointe & Reisetter's (2008) work. This research advances a different way of contemplating observed experience of others. It suggests the consideration of others (and evidently self) as potential contributors for learning in different degrees of deepening awareness. Contemplated as an emergent progression of expanding awareness, it refocuses the perception of human actors as contributors for learning in the NL setting. It is not a question of wanting or not wanting to participate in online learning activities with others. It is a question of understanding roles of teachers and students. This configuration of variation gives an alternative way of understanding the inter-human interactions for learning in the NL setting. It provides an alternative way for explaining why interactions with the teacher do not arise in some participants' accounts whereas in others they surface as a significant impacting influence as reported by Gibbings, Lidstone & Bruce (2010).

6.2.2.2 Teachers and learners for each other

The configuration constructed by this research based on students' accounts explicitly spotlights what is seen from the participants' disclosures as the inseparability of a given perception of other students and the complementary perception of teachers in thinking about human others as contributors for learning in a NL course environment. The findings of this research suggest that deepening awareness of the potential of human actors to support learning prompts the student to bring the two apparently distinct perceptions of other students and of teachers closer together. These findings indicate that there is reason to contemplate that we are all teachers and learners for each other even when the learners are relatively young students in post-compulsory pre-university education.

The portrayal of NL experiencing set out by this research suggests a most elaborated view going beyond collaboration with concerned others to reach learning objectives. The portrayal of teachers and other students as distinct contributors to learning yet coming closer together renders both as simultaneously teachers and learners for each other. All this leads me to consider the NL approach in its most elaborate form as an ideal, and the outcome space as a representation of expanding awareness in experiencing learning mediated by networked technologies which moves towards this ideal.

6.3 Further Comments

Fundamentally, comparative analysis of phenomenographic outcome is not characteristic of the phenomenographic stance. Even if all factors are equal, in general different phenomenographic studies are not expected to be replicable (Marton, 1986; Marton & Booth, 1997). In doing phenomenography there is "the process of discovery" which Marton (1986) compares to the exploration of flora on an island. There is the recognition of categories (Marton, 1986), and added to them the structural relationships which, in their interpretation from participants' accounts, researchers bring together logically in whole and in parts. However, when pitting phenomenographic outcome against outcomes of other research, it may well expose issues of interest which are not visible otherwise.

6.3.1 The possible suggestion of variation

In my research I investigated the NL experience of relatively young post-compulsory pre-university students. Besides, the research is situated in Malta where, as claimed by Vermunt (2007) of southern European countries a predominance of authoritarian teacher-student relationship is observed. Yet, a number of the participants' comments appear to reverberate disclosures which Nicolajsen (2014) cites of her university level research participants. This observation becomes more interesting in light of the claimed problem-oriented approach as "foundational model" of the university context of Nicolajsen's research (Ryberg, Buus & Georgsen, 2012), and moreover the claimed

prevalence of democratic teacher-student relationships of northern European countries (Vermunt, 2007). These observations suggest that variation in the students' experiences of the NL approach goes beyond geographical location, age, teacher-student power differential, educational level, and broad institutional attitude towards teaching and learning.

The configuration emerging from this research is also found coming close to Shah's (2014) description of variation in Pakistani teachers' conceptions of the use of networked technologies for learning. In Figure 6.1 I present these two sets of findings side by side to explicitly display this surprising close correspondence. This correspondence between the two structures – one mapping qualitative differences in the accounts of relatively young Maltese students on their NL experiencing and the other mapping variation in conceptions of older Pakistani teacher participants on the use of networked technologies for teaching – suggests that moreover there is more than the teaching or the learning, and the thinking about versus the actual experiencing of learning using networked technologies. The close correspondence between the outcomes of these two studies suggests 'theoretical extension' (Hennink et al., 2011) of existing knowledge on the experience of teaching-learning using networked technologies. As an aside, I note that this correspondence seems to testify to Ashwin's (2012) recent argument that teaching and learning are more than interdependent but "different aspects of the same processes in which students and teachers engage together" (p.2). It brings to mind the positive relationship between teachers' approaches to teaching and students' approaches to learning advanced by Trigwell & Prosser (1999). Two stray comments encountered in the participants' accounts of this research are evocative of this and hint that students tend to conform to teachers' methods as pointed out by Margaryan et al. (2011).

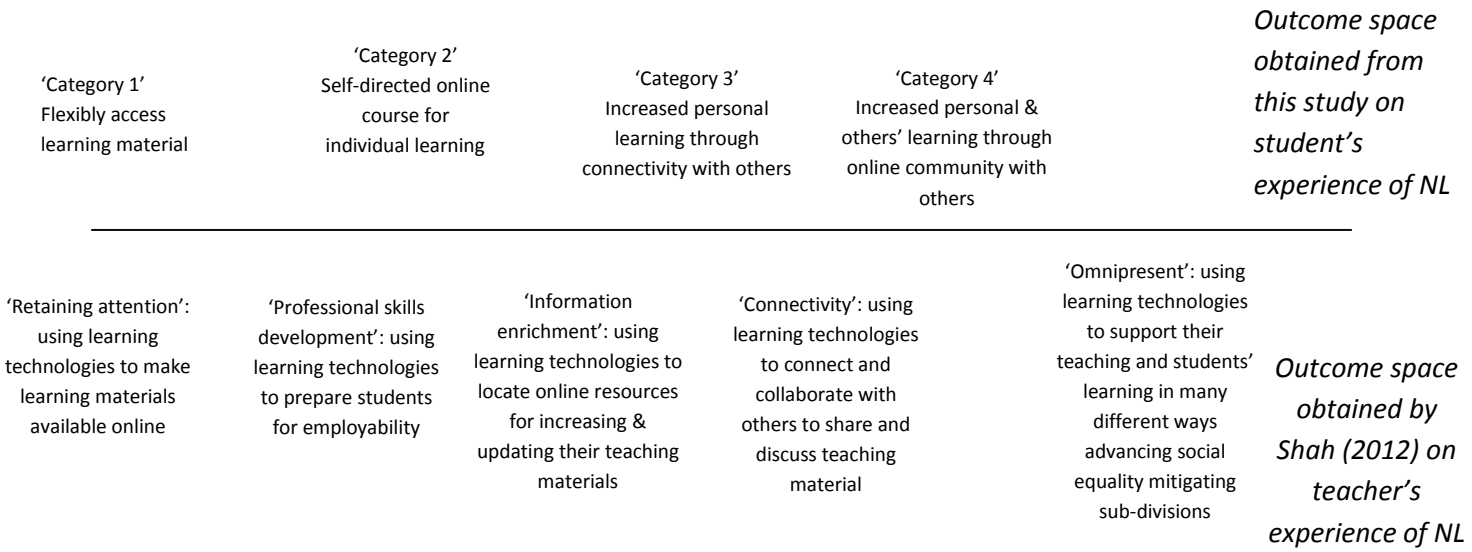


Figure 6.1: Comparison between the student's NL experiencing and Shah's (2012) variation in teacher' conceptions

Through the close correspondence between variation in teacher's views and students' accounts is emphasised the responsibility of teachers as one of two equally important primary stakeholders in teaching-learning processes, and the complex assemblage of teaching and learning evidently as an undivided process. It suggests that the NL approach as a change in thinking about teaching-learning is no different for teachers than it is for students.

6.4 Conclusion

In this chapter I argued that the findings of this study advance the existing unearthed research front in their suggestion of a new way of contemplating differences in students' accounts on NL experiencing, and differences in how they claim to perceive teachers and other students as contributors for learning in this experiencing. By this research I present an emergent progression of expanding awareness as an alternative view to existing pictures of the students' experiencing of learning using networked technologies in terms of contrasts and conflicts. This I consider to be a favourable viewpoint for thinking about NL.

Mature students are recognised as more capable of reflection and reflexivity (Moon, 1999), and of having amassed a greater amount of knowledge and experience than younger counterparts. But this does not mean that the value of younger learners as learning contributors to learning is to be dismissed (as happens in the case of instruction-based teaching methods) when at the same time we talk much of the need to get our students to co-operate and collaborate for learning. Perhaps if we want students to be taking up using networked technologies in the formal learning setting as they are found doing in the wider life context we also need to recognise the potential of the younger student as a teacher. That is, these findings of this study signal the need for us teachers and students to revise our thinking of the young post-compulsory pre-university student – and the student in general, as a learning contributor.

In the next chapter concluding this study I will consider the significance of these findings in my appraisal of the research enterprise as a whole, presenting them as stepping stones leading to future research directions.

Chapter 7: Appraisal of the Research Ventured

7.1 Introduction

In this research study I set out to investigate the Maltese post-compulsory pre-university student's experiencing of NL. I was inspired to take up this work by the rapidly evolving wider life context suggesting the increasing importance of the NL approach in formal learning contexts. Research on students' conceptualisations, perceptions, understanding and experiencing of NL can help inform learning design and practice as the use of networked technologies progressively grows to become an integral aspect of teaching and learning systems.

In my work I wanted to explore how the post-compulsory pre-university student experiences NL when there is a teacher-led effort to move away from prevalent traditional teaching-learning practices. I wanted to transcend the seemingly contrasting and conflicting ways in which students are reported in the literature to be living out learning using networked technologies when this is proposed to them in the formal learning setting. In my research I wanted to gain an understanding of the observed diversity, dissonance and ambivalence in students' experiences. To rise above contrasts and conflicts in my work I specifically *addressed* them. I made variation in lived experience the focus of my research. I managed to transcend contrasts and conflicts by adopting the phenomenographic approach. This research strategy also prompted me to strive for a non-judgemental viewpoint. Assuming a perspective of expanding awareness I found a way to understand the reported contrasts and conflicts in students' experiences of learning using networked technologies rather than reaffirm them.

In this chapter I start by summarising the findings of this research study and how this study contributes new knowledge. In a separate section I discuss the implications of this work for the local context, acknowledging the partiality of the research findings. I follow on with a section considering the bounding limitations

and delimitations of this research thus leading me on to point out future research directions. In conclusion I note that there is no end to the research enterprise.

7.2 Summary of findings

Phenomenographic research led me to describe the different ways the Maltese post-compulsory pre-university student accounts for NL experiencing as an emergent progression of expanding awareness. As seen emerging from students' accounts, I configured this expansive space in terms of four qualitatively distinct and hierarchically inclusive categories. From a referential perspective, Category 1 has the student experiencing NL as using the Internet to flexibly access learning resources when required. Category 2 has the student experiencing NL as using the Internet to follow through individual self-managed learning. Category 3 has the student experiencing NL as using the Internet for learning in connectivity with (human and non-human) others strictly for increasing personal learning. Category 4 has the student experiencing NL as using the Internet for learning in community with networked others in consciousness of facilitating others' learning as well. Structurally, these categories are configured as coming together in terms of three critical themes of expanding awareness tied to the use of technology for learning, active learning and cognitive engagement towards perceived learning goals, and relating to others for learning that is the implied interactivity with human others for learning. Together, these indivisible yet analytically separated referential and structural constructs form a linear inclusive hierarchy describing the student's experiencing of NL in whole and parts. The watershed between the second and the third category portrays the student shifting from an "outside" positioning to an "inside" positioning within the learning network resonating with what Wengerif (1998) purports to be the threshold experience: "This threshold is essentially a social one; it is the line between feeling part of a community and feeling that one is outside that community looking in" (p.38).

Further phenomenographic analysis of students' accounts led me to another inclusive hierarchy configuring qualitative differences in the Maltese post-

compulsory pre-university student's perception of teachers and other students as contributors for learning in this NL experiencing. In Category 1, the student perceives teachers as the source of learning and other students possibly as an indirect influence. In Category 2, the student recognises teachers as (organisers and) guides for learning and other students as supportive to learning through their visible online activity and interactivity. In Category 3, the student recognises teachers as learning conveners and other students as co-learners. As awareness (of the potential of others for enriching the learning experience) grows, the student shifts from focusing only on teachers in their capacity of passing on information to the student, to a focus on both teachers and other students as learning facilitators albeit in different ways, to a focus on teachers and other students (seemingly including self) as co-contributors for learning. Critical themes of awareness here are the *roles* of teachers and of students.

7.3 New knowledge contribution

These research findings address post-compulsory pre-university Maltese students choosing to study intermediate computing in preparation for Matriculation examinations. This research is unprecedented in the local context both in view of the NL approach as the study phenomenon, and the phenomenographic research approach employed to study the student experience of a technology-mediated learning approach. It is considered to be ground-breaking not only with regards to the Maltese post-secondary educational sector, but also the Maltese post-compulsory formal education generally. Surprisingly, the only locally situated research on students' experiences of learning using networked technologies is that of Rolè (2014) which, as I delineated in chapter 1, comes from the same Maltese post-secondary college context.

The description of NL experiencing for understanding the student experience holistically I present by this research appears to be unprecedented not only in association with the 'digital native' in Maltese formal post-compulsory pre-university education, but apparently in the NL field at large. That is, this research

is also considered to be ground-breaking in view of its suggestion of an emergent progression of expanding awareness for understanding NL experiencing, and, within this experiencing for understanding how the student perceives teachers and other students as contributors for learning. In view of the student's perceptions of human others, it is considered to be ground-breaking in its suggestion that the teachers and other students as contributors for learning in NL experiencing are perceived as complementary and with heightening awareness approach convergence. In the literature on educational technology, the perception of other students has received some attention (McConnell, 1998; Krüger, 2006; Lapointe & Reisetter, 2008), but the modest number of studies unearthed, relate to mature students in post-graduate studies, CPD and/or the workplace, and focus on the perceptions of peers.

7.4 Implications for educational practice

Fundamentally, even if all factors are equal, phenomenographic results are open and partial – I am repeatedly reminded of Marton's (1986) analogy of the botanists on a discovery expedition of plants and fauna on a remote island, highlighting that different researchers in general come up with different configurations. The findings of this research are all the more partial in acknowledgement of the fact that this research addressed the particular case of post-compulsory pre-university students choosing to study intermediate computing at a specific Maltese post-secondary college at a particular point in time. Nonetheless to some greater or lesser degree this research work is considered to hold communicative and pragmatic validity for teachers and learners in different formal NL contexts.

The aim of phenomenographic research is to describe variation in experiencing, understanding, perceiving or conceptualising a study phenomenon (Marton, 1986; Marton & Booth, 1997). Taken beyond 'pure phenomenography' towards the notion of what Bowden (2000) contemplates as 'developmental phenomenography', the phenomenographic research outcome may be taken

forward “to enable them [research participants] or others to change the way their world operates” (Bowden, 2000, p.3). Although phenomenography is not prescriptive (Bowden, 2000), yet phenomenographic research outcomes may still be considered as a means to inform practice.

The findings of this research study provide the NL field and the educational technology realm generally a first glimpse of the qualitatively different ways the student accounts for NL experiencing. These findings primarily suggest that NL is not a learning approach which *all* students take up unproblematically when proposed. Take-up depends on the aspects of NL the student forefronts and the degree to which the identified critical dimensions of awareness are expanded.

Additionally, from this research work it emerges that experiencing NL structurally closes in on three critical themes: proficiency in the use of technologies for learning, proficiency in (cognitive) engagement in online activities for learning, and proficiency in skills relating to inter-human interactivity for learning. The findings suggest that limited proficiencies lead to a passive ‘having’ type of NL experiencing wherein the student remains on the outside of the ‘complex assemblage’ which is NL. The findings also suggest that elaborated proficiencies lead to an active ‘making’ type of NL experiencing wherein the student is an integral element of this ‘complex assemblage’. Hence these findings may be taken to suggest that for advancing NL practice we need to create opportunities for students to develop these proficiencies; that is, to create opportunities for students to develop skills using different networked technologies for learning, create opportunities for students to experience a variety of online learning engagement modalities – each mode presenting well-defined distinct learning goals and create opportunities for students to experience different ways of relating to human others for learning.

The second set of findings – investigating variation in this student’s perception of teachers and other students as contributors for learning in the NL setting – suggest that in NL experiencing it is also important to create opportunities for students to experience teachers and other students acting out different learning

as well as teaching roles. Variation theory (Marton, Runesson & Tsui, 2004; Marton, 2014) incorporating the patterns of variation, namely contrast, generalisation, separation and fusion, may possibly come across as useful for systematically framing opportunities for empowering students in learning (and living) in a networked world. In an encompassing traditional context, providing opportunities for students to expand awareness on what are constituted as critical dimensions or themes may be viewed as a way forward.

Perhaps, as suggested by the emergent progression of expanding awareness on the student's perception of teachers and other students (as I advance by this study), if we want students to be taking up using networked technologies in the formal learning setting as they are found doing in the wider life context we need to be recognising, creating opportunities for, and valuing the potential of the younger student as 'teacher' too. In this way we may also be creating opportunities for students disillusioned by traditional transmissive teaching methods to find a reason to be present in "class" to learn rather than simply being a name on the student list.

7.5 Partiality of the research outcomes

In phenomenography, the research boundaries do not define the view of what can and cannot be observed of the population studied. They do not dictate the reach and transferability possibility of the findings as one would argue from a positivistic perspective. What they *do delineate* is the relative partiality of the constituted descriptions. For the case of this research the several bounding factors are considered to have exacerbated the problem of partiality in phenomenographic outcome to what it might have been without.

7.5.1 In consideration of the surrounding context

Embedded in a traditional teaching-learning context where the lecture continues to reign unchallenged, the NL experience on which this research is based was a "fabrication" moving away from the predominant and widely accepted teaching-

learning methods. Insofar as was possible, it was not permitted to disrupt the embedded college *modus operandi*. Moreover, the study participants were all post-compulsory students on the pre-university Matriculation programme who chose to study intermediate computing. This 'case' delimitation is considered to be a particularly restrictive overarching factor exacerbating the partiality issue of the research findings. Even if one does not venture beyond the local context and contextual differentiation of the seven or so post-secondary providers in Malta, there is already the restriction of participants drawn from a single subject area. Even if it is argued that students on the Matriculation programme in Malta necessarily choose a mix of subject areas to study, hence not necessarily tending to pursue STEM-related university courses, there is no escape from the undesirable impact on the relative partiality of research outcomes.

A participant commented on divisions between students coming from church-run secondary schools and students coming from state-run area secondary schools.[11] This and other demographic factors (such as the students' prior formal learning, prior educational achievement, combination of subjects studied, university course (or area of studies) aspired to, and socio-economic factors) were not taken into account by this research. Surely these bounding factors also affect the relative partiality of research outcomes.

Another contextual limitation of this study was the persisting one-hour weekly class meeting. Although persisting face-to-face meetings are not denied in NL practices this approach using networked technologies for learning is more associated with distance and open learning (McConnell et al. 2012). Even if three participants acknowledged the redundancy of this continued face-to-face meeting it would be useful to investigate a fully online NL course experience with optional face-to-face support (such as an orientation meeting and supplementary seminars/workshops).

[11] Radical changes in the Maltese secondary system are now under way but till recently the area secondary schools took in students who at the end of junior school did not pass examinations to gain entry into the state-run prestigious Junior Lyceum or church schools

Also considered to be a contextual limitation of this study is the “imposition” of the NL experience presented as a compulsory part of the computing curriculum. This attitude contradicts what Cousin & Deepwell (2005) point out as the openness and democratic fundamental principles of NL. Furthermore, the short duration of the NL course (eight weeks plus one week for orientation at the start of the course and another week at the end of the course for assessment and evaluation purposes) does not realistically permit a learning community to congeal (Cousin & Deepwell, p. 61).

Because of technical problems, the NL course had to be scheduled for the last few months of the academic year before high-stakes examinations. This constraint is observed by participants as having had a negative impact on the lived NL course experience. This ‘unfavourable timing’ was noted by three of the research participants as well. Additionally, this delay is also deemed to have had a ripple effect on subsequent research processes, such as the scheduling of the interviewing period which had to be postponed by four months after the course experience. In view of this delay, interviewees at times complained that they could not remember the experience in sufficient detail to comment as requested during the interview. However there might have been also other additional reasons why student participants at times chose not to comment. There were other factors which were revealed by participants as having had a negative impact on their NL experience, such as the perceived ease of subject content addressed by the NL course, others’ lack of online participation, and lack of awareness of the usefulness of the communicative elements of the course. As such these issues are not considered to be limitations of the research work itself but factors possibly hampering the students’ experiencing of NL.

7.5.2 In consideration of the researcher and the practitioner

In doing research the researcher’s understanding of the research process and the research object are also considered to be other irrefutable limiting factors, even if these relate more to the research quality rather than to the scope of the

research, though they indirectly contribute to it as well. For instance, with respect to the research phenomenon that is NL, I see my understanding as in a state of development. In this particular study where, as the practitioner and the researcher, I devised the research context in terms of the NL course setting and the associated tutoring, my evolving understanding had an even more far-reaching effect. And added to this understanding was my practitioner-researcher's struggle shedding deep-seated traditional teaching and learning attitudes which I only started to seriously question when reading post-graduate studies online at foreign northern European universities. Cousin & Deepwell (2005) refer to the risk of educationalists who in their NL pursuit "may congeal their ideas and practices into new and even oppressive orthodoxies" (p.61). A similar problematic imprint holds for the researcher's engagement doing research. I cannot help but think of the influence of my transient understanding and the impact of my conduct as a beginner phenomenographer on the relative degree of partiality of the outcomes of this research.

7.5.3 In consideration of the research conduct

As mentioned in chapter 4, a factor which is recognised as having affected the research process was the part-time basis on which this research expedition was taken up. This was especially experienced as a constraining factor during the iterative processes in doing phenomenographic data analysis. As a full-time teacher I started on this process at the end of the academic year when I was released from the teaching assignment, thus capitalising also on the summer vacation. But necessarily the later part of this process ran into the subsequent academic year. I learnt first-hand how difficult it is to carry out phenomenographic analysis in fragmented time spans. I overcame this problem by scheduling the next iteration to start at the beginning of the week-end, when I had just about two whole days for pulling through the critical part of the iteration reading through the transcripts one after the other in uninterrupted succession to arrive at the next set of categories. In part I agree with Åkerlind (2005b) that the breaks had me going

back to the process of data analysis with a fresh outlook, but at times work pressure was experienced as a substantial hurdle even when not at work, and this necessarily influenced my engagement doing research, despite my best effort.

As such I consider the whole research effort and the presented outcome as marked by all that I am as a researcher and as a person with all the life and work circumstances I faced through this research journey. Somehow I have to admit that despite my best effort in doing research, to some degree or another each research step bears my imprint. In writing about the bounding factors of this study (impacting on the partiality of the research outcomes) I cannot help but recognise the infinity of what I did not do rather than what I managed to do. There are so many issues that I have not considered in my work, elements I simply let pass, aspects and alternative viewpoints that I did not think through, and others which I did not even think of.

7.6 Future research directions

In this research, it is not excluded – to some degree even contemplated – that the inevitable weekly face-to-face meetings even if these were an extension of the online rather than vice-versa, mitigated the students' experiencing of NL, particularly those students who were largely disengaged from their studies. The same research on a fully online NL course experience may well see the first and second categories merging into a single category. But this is all to be investigated in future work.

Future research on NL experiencing in the computing post-secondary sector may be taken up to expand on this research to explore ways how the student can be supported to shift to more elaborated ways of approaching learning using networked technologies. This study suggests three critical proficiencies, which I labelled technological proficiency, learning proficiency and social proficiency. Future research may pick up on this lead. To this end, Marton et al.'s (2004) patterns of variation including contrast, generalisation, separation and fusion (p.

16) may be called upon to frame such future research investigating ways how to support the student to ‘make’ NL experiencing rather than ‘have’ NL experiencing, possibly in a more elaborated way.

Necessarily variation in the post-secondary student’s lived experience of NL and variation in the student’s perception of others are interlinked because they are different hierarchically related aspects of the same NL experience. Future research also needs to be directed at explicitly clarifying the hierarchical nature of this link, and also explore how the student may be supported to embrace more elaborated views of teachers and students as contributors for learning and how this relates to NL experiencing. The critical themes governing variation in the perception of human others as contributors for learning in the NL setting are the role of teachers and the role of students. Again, Marton et al.’s (2004) patterns of variation may be considered for such an exploration.

This study does not consider the distribution of the post-secondary students’ experiences across the outcome space. Such mixed method research would be an interesting pursuit, not only because students’ capabilities of more elaborate ways of engaging and relating to others for learning is correlated to age and maturity (Moon, 1999), but also in view of resonance between the research participants’ accounts and the reported disclosures of tertiary level students on their experiences using Web 2.0 tools during their course of studies (Nicolajsen, 2012). Furthermore, there are the similarities observed between the configuration of variation constituted by this research study and the reported description of Pakistani’s teachers’ understandings, wherein technological resources are reported to be somewhat limited (Shah, 2014) (this is in distinction from the Maltese setting wherein mobile and networked technologies are more commonplace).

Two research participants studying subjects from the humanities at advanced level even broached the question of self-positioning and student-to-student relations for learning. One of these participants even speculated that students studying Mathematics and Computing are “irresponsible” when it comes to

(graded) collaborative work. It would be interesting to investigate the distribution of students across the outcome space also according to the discipline areas they are majoring in. Additional mixed method research could expand on taking into consideration other student demographics such as gender, prior educational experiences and university studies aspired to.

The research participants of this study are students studying Computing at intermediate level at a specific Maltese post-secondary college. Unprompted, during the interview a number of participants reflected on the appropriateness of the NL approach for different study subjects and even study topics within Computing as a study area. Future research needs to be directed at investigating the Maltese post-secondary student's experiencing of NL across subject areas, and even across different learning levels. Future research work should make it possible to assemble a broader description of the Maltese post-secondary student's experiencing of NL, possibly a constitution suggesting an emergent progression of expanding awareness as advanced by this study.

More research is also required to extend this study across the whole Maltese post-compulsory pre-university sector. It would also be useful to expand this research on the student's experiencing of NL to spread across educational levels, across cultures, and across different Mediterranean and European contexts to explore differences and similarities in NL experiencing. Such research would be useful making these research outcomes less partial in their openness hence possibly better for informing future NL designs and implementations, and even international partnerships.

In a local respected newspaper, Zammit Marmara (2012) talked about the high attrition rate of the post-secondary educational sector. Although empirical work is first and foremost required to investigate this situation, explorative work can also be directed to investigate the possibility of drawing upon the NL approach to address this problem.

In view of the claimed benefit of the NL approach to support students to become independent learners, future research may also be directed at finding out the

extent to which the NL approach helps students to become more independent, both in the sense of managing their own studies and in developing their (critical) thinking skills.

In my study I turn a spotlight on the problem of human relations in learning by investigating variation in the student's perception of human others as contributors for learning, but I hold back from going deeper in my investigation of the social aspect of NL which, by way of the critical theme of expanding awareness 'social proficiency', emerges as highly important. The study of social identity and positioning in the context of NL is deemed to be another aspect which needs to be investigated in relation to the post-compulsory pre-university student. Already, Rolè (2014) is observed digging into this relatively unexplored territory on her post-compulsory advanced chemistry students learning in a blended learning context. Broadening research on the *adolescent*'s identity and positioning in the context of NL would be useful both for future NL designs and online tutoring.

An area which this research signals and which is still unexplored territory in the NL field is the interaction of teaching and learning, or to use Ashwin's (2012) terminology, teaching-learning interactions. The second outcome space emerging from this study signals an interrelation, but more research is required to establish both the nature and the meaning of these ties. Moreover, in view of the extremely different contexts, the closeness of the outcome space describing the different ways in post-compulsory pre-university Maltese intermediate computing students' accounts of their NL experiencing and the outcome space describing Pakistani university teachers' conceptualisations of teaching using networked technologies, gives reason to think of extended relevance to the description of teaching-learning using networked technologies. However, further research in different research contexts investigating variation in conceptualising, approaching and experiencing teaching-learning using networked technologies is considered to be a must to triangulate such a strong claim to theory development and partiality.

Finally, as I highlighted several times through this research document, an unavoidable bounding factor of this study was the individual researcher stance.

Possibly, future research in the directions outlined above will be taken forward by a team of researchers, thus increasing the potential of attaining more sophisticated research outcomes.

7.7 Concluding remarks

By this study I pursued my growing interest in NL. This interest stemmed from my focus on the higher order aims of my teaching commitment in the post-secondary sector and my vision of networked and distance education becoming an accessible alternative even for post-compulsory pre-university students aspiring to university courses even in Malta.

By this study I also pursued my other developing interest, that is, the phenomenographic research approach, which I came across during the first part of my doctoral studies. I recognised phenomenography as appropriate for my purposes to gain an understanding of the different ways of experiencing NL away from notions of contrasts and conflicts. Through this research experience I have come to appreciate the phenomenographic perspective in its alignment to the theoretical underpinnings of the NL approach, which alignment in my opinion suggests phenomenographic research outcomes favouring the practice of NL (Cutajar, 2014).

By this study I contribute to new knowledge in the following ways:

- I extend the growing body of literature on the student's experience of NL bringing in the Maltese post-compulsory pre-university sector;
- I advance an alternative understanding of variation in Maltese post-secondary student's NL experiencing, not as a set of contrasting and conflicting possibilities, but as a constitutive view suggesting a emergent progression of awareness by way of the phenomenographic perspective wherein to different degrees a person is aware of certain aspects of a given phenomenon at a particular moment in time in a particular setting;
- I also advance a constitutive view, again suggesting an emergent progression of awareness, of how the Maltese post-secondary student

perceives teachers and other students as contributors to learning in the NL setting. In distinction, this description brings together variation in the student's perception of teachers and other students as an inseparable composition.

The research work presented is far from complete and perfect as I point out several times in this research document and particularly in the previous two sections of this chapter. This does not mean that during the research process I did not do my best, as hopefully I managed to show by means of this research report.

Having set forth the stepping stones to future research in the previous section, I draw this research study to a close. To do this not in acknowledgement of any end to the research process, but in having arrived at an answer to my two research questions, and this always in recognition of the partiality of this research outcome, the infinity of the world of knowledge, research, learning and last but not least experiencing.

Appendix A1: *Ethics Related* – Student consent form

UNIVERSITY OF MALTA
L-Università ta' Malta

LANCASTER UNIVERSITY
Department of Educational Research

Participation Information & Consent Form

Dear participant,

My name is *Maria Cutajar* and I am an academic staff member within the Department of Computing and I.T. at the Junior College as well as a doctoral student supervised by *Dr. Paul Ashwin* within the Department of Educational Research at Lancaster University.

As a student studying Intermediate Computing at the Junior College and having participated in the 'Basic Computing Principles' e-learning course, you are asked to participate in an interview as part of a study whose purpose is to gain an understanding of this experience from the students' perspective. This research may serve to improve the quality of teaching and learning offered to students in post-secondary education.

The interview will take approximately *50 minutes* and will be audio-taped. You may request that the recording device be turned off at any time. Our discussion will be informal and topics may emerge as we exchange ideas. However, I hope to address the following (4) areas of enquiry:

1. *What the student conceives of e- learning*
2. *How the student approaches e-learning*
3. *How the student perceives others in e-learning*

When I have completed transcribing the recording, I will give you a copy of the transcript of our conversation. You will have *five (5) days* to review the transcript. If you are comfortable with the content of the transcript, please reply to me as soon as possible to let me know. If not, you may add, revise, or delete information from the transcript as you see fit.

The data from this study will be used in my doctoral thesis or published and presented at conferences. To safeguard your confidentiality and anonymity, you will be given a pseudonym, and all identifying information will be removed. The audio recording and transcript of our conversation will be safely stored, as will your contact information. You may withdraw from the study for any reason, at any time, without penalty of any sort. If you withdraw from the study at any time, any data that you have contributed will be destroyed. There are no risks involved in the participation.

Writing your name below means that:

- ✓ You have read and understood the above
- ✓ You are sixteen (16+) years old
- ✓ You give consent to participate in the research

Name: _____ Date: _____

If you would like any further information about the project, please contact me by email at:

Researcher: Maria Cutajar
Email: maria.cutajar@um.edu.mt

If you have any concerns about this project, please contact my supervisor, Dr Paul Ashwin, or the Head of the Educational Research Department, Professor Carolyn Jackson:

Supervisor: Dr. Paul Ashwin
Email: paul.ashwin@lancaster.ac.uk

Head Of Department: Professor Carolyn Jackson
Email: carolyn.jackson@lancaster.ac.uk

Head of Department
Dr Carolyn Jackson, BSc, PhD
Professors
Mary Hamilton, BA, MA, PhD
Colin Rogers, BA, PhD
Murray Saunders, BA, MA, PhD
Malcolm Tight, BSc, PhD
Paul Trowler, BA, MA, Cert Ed., PhD

http://www.lancs.ac.uk/fass/edres

Lancaster University
County South College
Lancaster LA1 4YD
United Kingdom

Tel. (+44) (0)1524 592685

Appendix A2: *Ethics Related* – Parental/Guardian consent form

Parental/Legal Guardian Request Form

Dear parent and/or guardian,

My name is *Maria Cutajar* and I am an academic staff member within the Department of Computing and I.T. at the Junior College as well as a doctoral student supervised by *Dr. Paul Ashwin* within the Department of Educational Research at Lancaster University.

While studying Computing at intermediate level, your son/daughter had the opportunity to experience e-learning as an integral part of the course rather than simply studying about it. As parent and/or guardian, I ask permission for your son/daughter to take part in a research study whose purpose is to gain an understanding of this experience from the students' perspective. This research may serve to improve the quality of teaching and learning offered to students in post-secondary education.

Participation in the study involves the use of data collected by the course management system and other networked technologies used during the run of the course, a questionnaire and possibly an interview to be held at the Junior College at a time convenient for your son/ daughter.

The data from this study will be used in my doctoral thesis or published and presented at conferences. To safeguard your son/daughter's confidentiality and anonymity, a pseudonym will be used and all identifying information will be removed. Data will be stored in encrypted format in a safe place. Your son/daughter may withdraw from the study at any time, without penalty of any sort. If he/she withdraws from the study, any data that she contributed will be destroyed. There are no risks involved in the participation.

Writing your name below means that

- ✓ You have read and understood the above
- ✓ You give permission for your son/daughter to participate in this research

Parent/Guardian's Name: _____ Son/Daughter's Name: _____

Date: _____

If you would like any further information about the project, please contact me by email at:

Researcher: Maria Cutajar
Email: maria.cutajar@um.edu.mt

If you have any concerns about this project, please contact my supervisor, Dr Paul Ashwin, or the Head of the Educational Research Department, Professor Carolyn Jackson:

Supervisor: Dr. Paul Ashwin
Email: paul.ashwin@lancaster.ac.uk

Head Of Department: Professor Carolyn Jackson
Email: carolyn.jackson@lancaster.ac.uk

Appendix A3: *Ethics Related* – Institutional permission request form

UNIVERSITY OF MALTA
L-Università ta' Malta

LANCASTER UNIVERSITY
Department of Educational Research

The Principal, Mr. J. Sciriha
G.F. Abela Junior College,
Msida.

Permission Request for Research

Dear Sir,

As part of my teaching practice within the Department of Computing and IT, I give students opting to study Intermediate Computing the opportunity to *experience* e-learning as an integral part of the course in my teaching them about it.

In relation to my doctoral studies supervised by *Dr. Paul Ashwin* within the Department of Educational Research at Lancaster University, I would like to ask permission to recruit current first year Junior College students who opted to study Intermediate Computing this academic year 2011-2012 and who are currently having this e-learning experience for investigating *their perspective* of this e-learning experience. This study will help to gain an understanding of the different ways students in post-compulsory pre-university education experience a form of e-learning. In view of societal developments this research can serve to improve the quality of teaching and learning offered to our students in the post-secondary sector and in transition to higher education.

Participation in the study involves the use of data collected by the course management system and other networked technologies used during the run of the course, a questionnaire and interviews to be held at the Junior College with a selection of students at a time convenient for participants. Ethical clearance in relation to this research is being sought from the Lancaster University ethics committee and also from the University Research Ethics Committee (UREC) of the University of Malta.

If you would like further information about this project please contact me by email or as deemed most convenient. You can also contact my supervisor, Dr Paul Ashwin, or the Head of the Educational Research Department, Professor Carolyn Jackson.

Please sign below and return to give permission for this research. A copy is attached for your own records.

Principal: _____

Date: _____

Researcher: Maria Cutajar
Room 226, Department of Computing and I.T.,
G.F. Abela Junior College, Msida
Email: maria.cutajar@um.edu.mt

Supervisor: Dr. Paul Ashwin
Email: paul.ashwin@lancaster.ac.uk

Head Of Department: Professor Carolyn Jackson
Email: carolyn.jackson@lancaster.ac.uk

Appendix A4: *Ethics Related* – Student post-research correspondence

Dear participant,

Past the online learning experience of the Basic Computing Principles (BCP) course the other year you kindly accepted to be interviewed in relation to planned research on the post-secondary student's experience of e-learning. This research is now nearing completion. Very briefly the following are the findings of this work:

(i) In view of the student's experiencing, the configuration which emerged from participants' accounts includes four qualitatively different and hierarchically inclusive descriptions. Spanning across this hierarchy the student is portrayed shifting from self-positioning on the outside of the learning system in divergence of others; to self-positioning on the outside of the learning system in parallel to others; to self-positioning as an integral part of the learning system in connectivity with others; to self-positioning as an integral part of the learning system in community with others.

(ii) In view of the perception of teachers and students as contributors for learning in this experiencing the configuration which emerged is comprised of three paired qualitatively different and hierarchically inclusive descriptions. Across the hierarchy, in their facilitating roles for learning teachers and other students are portrayed as approaching convergence as learning conveners with the student.

One last time I thank you for your participation without which this research would not have been possible.

Best wishes,

Maria

Maria Cutajar
Department of Computing & IT, Rm 229,
G.F. Abela, Junior College, Msida
Email: maria.cutajar@um.edu.mt

Supervisor: Dr Paul Ashwin,
Email: paul.ashwin@lancaster.ac.uk
Tel. (+44) (0)1524 592685
Head of the Educational Research Department,
Lancaster University
County South College
Lancaster LA1 4YD
United Kingdom

Appendix A5: *Ethics Related* – Permission to adapt figure from Bowden (2005)

UNIVERSITY OF MALTA
L-Università ta' Malta

Maria Cutajar <maria.cutajar@um.edu.mt>

re Permission Request

John Bowden <john.bowden@rmit.edu.au> 29 July 2014 00:08
To: Maria Cutajar <maria.cutajar@um.edu.mt>
Cc: Paul Ashwin <paul.ashwin@lancaster.ac.uk>

Dear Maria,

I am happy to grant formal permission for you to adapt the figure labelled "Phenomenographic relationality" (Bowden, 2005, p.13) from the book (Bowden& Green, 2005) in the way presented in your email and attachment.

I was very comfortable with the adaptation you made and the views you expressed in the included excerpt. I wish you well in completing your doctoral thesis and in any future research you undertake. I would be pleased if you could send me notice of any publications that arise. I would be interested to read your work.

All the best.

John

[Quoted text hidden]

--
Professor Emeritus John A Bowden
RMIT University
Melbourne Australia

Adjunct Professor
Swinburne University of Technology

Address for correspondence:
55A Mount Street
Eaglemont 3084

Tel +61 3 9459 3237

Email john.bowden@rmit.edu.au

Appendix A6: *Ethics Related* – Permission to use figure from Cope (2000)

UNIVERSITY OF MALTA
L-Università ta' Malta

Maria Cutajar <maria.cutajar@um.edu.mt>

Re Permission Request

Chris Cope <c.cope@latrobe.edu.au> 29 July 2014 05:16
To: Maria Cutajar <maria.cutajar@um.edu.mt>

Hi Maria

The computer on which my PhD thesis was originally lodged has since been decommissioned, which is why the link doesn't work. Try http://ironbark.xtelco.com.au/staff/cope/cope-thesis.pdf. I'm not sure how long this link will remain active though.

You have my permission to include the figure in your thesis.

Best of luck with your PhD.

Chris
[Quoted text hidden]
~~~~~~

Dr Chris Cope

Senior Lecturer, Department of Computer Science & Computer Engineering

La Trobe University, PO Box 199, Bendigo, 3552
T: 03 54447340 | F: 03 54447998| M: 0439324006
W:http://ironbark.xtelco.com.au/staff/cope/Chris.Cope.html
~~~~~~

Appendix B1: *Related to Data Generation* – Interview plan

Interview to take place AFTER the Basic Computing Principles (BCP) networked learning course experience. The interview intends to encourage the participant to go back in time and reflect on her/his online learning experience, in teasing out what the student participant thinks she/he's having by a networked learning experience, how she/he goes about having it and why she/he does about it the way she/he does; and also her/his views of others as contributors to her/his learning.

Interview Questions

As an introduction, to get the conversation going

1. *Can you tell me about your background … your past experiences of online learning …what (Internet?) technologies you use (and used) …*
   a. *Do you have other experience of online learning apart from our (online learning) course?*

About our course, the Basic Computing Principles (BCP) online learning course …

Question 3, Question 4 and Question 5 interleave

2. *How did you go about learning online? Can you tell me about one incident from which you felt to have learnt during the online learning course?*
   a. *Describe a specific example … what you did; how you went about it; …*

   Later, in supplement … in consciousness that each study unit (across one or two weeks) includes a mix of individual, co-operative and collaborative activities)
   b. *Say, take a study unit of our online course, can you describe your (learning) activity during a typical study unit of the online course? What you did? What you were up to?*

   (Bridging to the next question with - *Why?* – during the conversation)

3. *What was your intention in going about it as you describe? Why did you do it like that? What were you hoping for by going about it that way? (If occasion arises … what were your intentions in relating to others in that way?)*

4. *How do you view others? other participants of the course? their contributions? (... if you find others helpful for your learning ...) How?*

5. *What did you get out of it, if anything? What worthiness do you find in it for you, if any? What does the online learning experience mean to you? (What do you see yourself acquiring by the likes of this online learning experience?)*

To round up, through the interview I asked you about what an online learning experience means to you, how you go about it and why you go about it the way you describe …

Now that you had time to reflect on the online learning experience you had and what experience you made … Can you summarize your thoughts about it?

Would you like to add any further comments?

Thank you for your participation.

Appendix B2: *Related to Data Generation* – Interview participants

The spread of participants corresponding to online activeness

Online Activiness /39	**Participant Count**	**Participants' Code-name**				
0	2	P37	P38			
1	1	P27				
2	0					
3	4	P8	P33	P51	P55	
4	2	P3	~~P40~~			
5	3	P16	P21	P36		
6	1	P45				
7	4	P28	P30	P56	P65	
8	0					
9	1	~~P54~~**~~P~~**				
10	1	P2				
11	2	P35	P46			
12						
13	2	P13	P44			
14	0					
15	1	P10				
16	4	P1	P7	~~P47~~	P60	
17	3	~~P11~~	*P25*	P66		
18	1	~~P43~~				
19	3	P41	P61	P68		
20	4	P23	P32	P48	P52	
21	4	*P6*	P18	~~P24~~	P42	
22	2	~~P26~~**~~P~~**	*P64*			
23	5	P9	P29	P58	~~P59~~	~~P67~~

24	4	*P4*	P15	P17	P39	
25	3	P12	P49	P62		
26	2	P5	P31			
27	1	~~P19~~				
28	2	~~P14~~	~~P20~~**~~P~~**			
29	1	P50				
30	4	P34	P53	P57	P63	
31	1	P22				
32	0					
33	0					
34	0					
35	0					
36	0					
37	0					
38	0					
39	0					

Legend

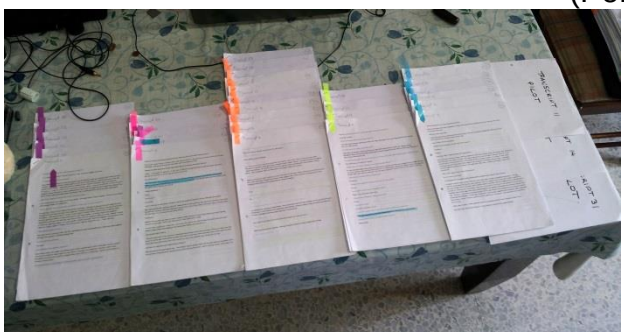
~~P99~~**~~P~~**	Pilot interviewee
~~P99~~	explicitly student declined interview invitation (Total:9)
P99	student accepted invitation to be interviewed but never fulfilled promise even after a gentle face-to-face reminder or two (Total: 4)
	student interviewed
	no student scored indicated mark

Number of interviewees per student group:

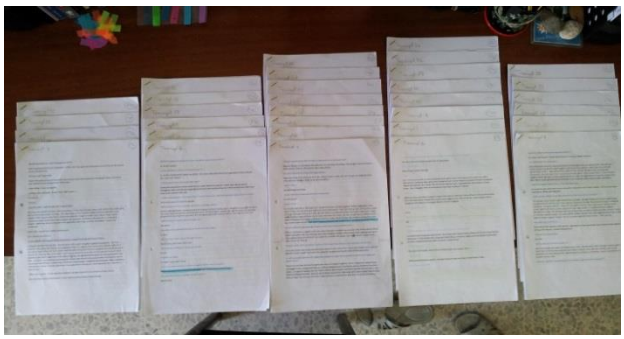
Group 1: 12 participants out of 22
Group 2: 11 participants out of 22
Group 3: 10 participants out of 24

Appendix C1: *Related to Data Analysis* – A selection of transcript sorts

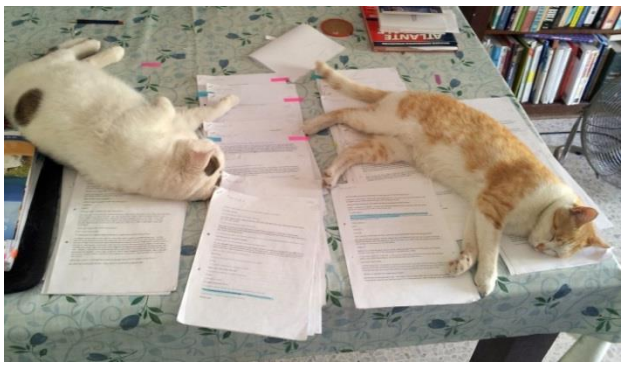
Iteration Number: 1 (Portraying variation in NL experiencing)



Iteration Number: 3

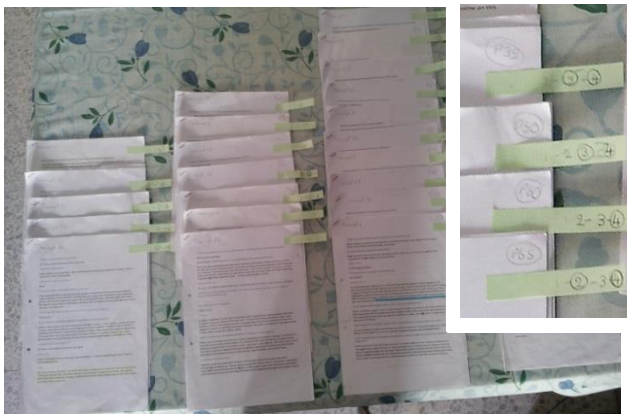


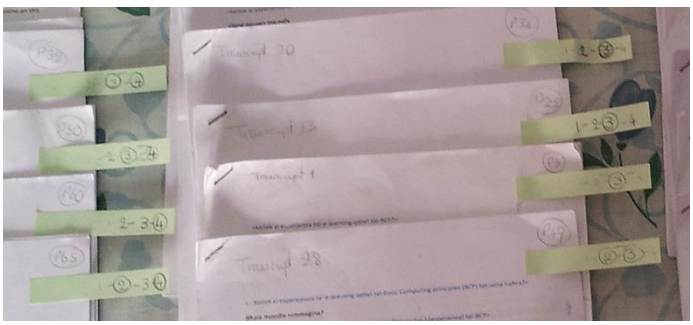
Iteration Number: 5



Developing consciousness of the collective

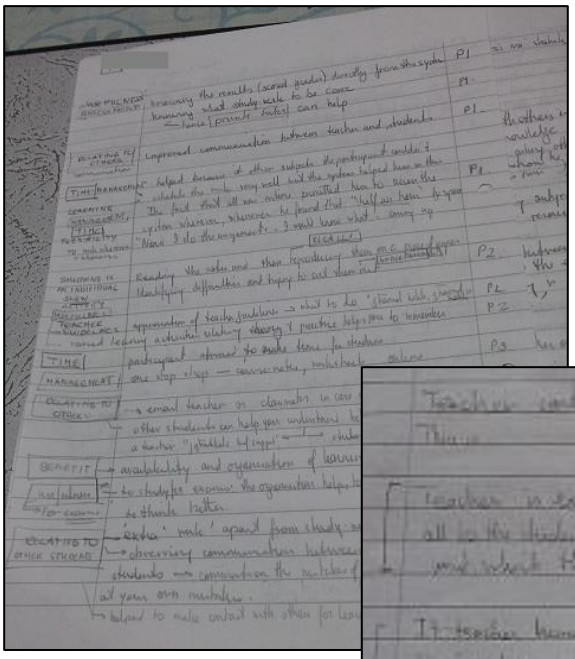
Iteration Number: 7





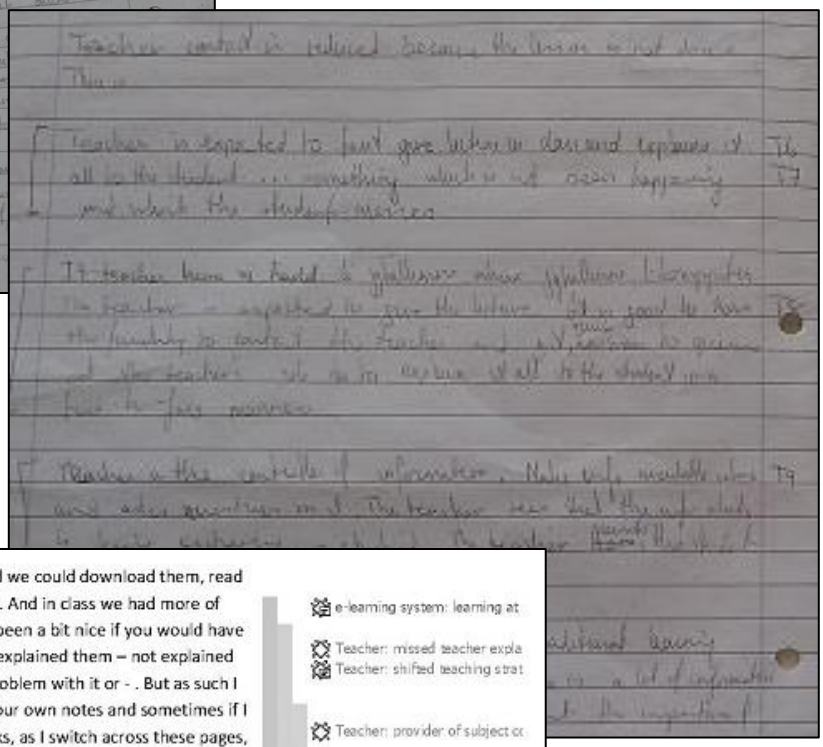
Detail of Iteration Number: 7

Appendix C2: *Related to Data Analysis* – Backend coding



Coding by Transcript
manual effort

Coding by phenomenon
manual effort



006 I loved the fact that we had notes and we could download them, read
007 them at our own pace. It was brilliant. And in class we had more of tutorial-based classes. It would have been a bit nice if you would have actually went through the notes and explained them – not explained them - but even to see if we had a problem with it or - . But as such I found it really good because we had our own notes and sometimes if I had a problem that we have just books, as I switch across these pages, and you don't have actual notes which are understandable. So I appreciated that you had the time to us notes. It was a good experience.

<If I ask you to go back on a typical week, how you worked, how you went about your studies>

008 Just in Computing or in all the other ones?

<During the BCP course>

009 WE usually had the lesson on Friday as far as I remember, so I used to
- mostly do Computing on Thursday to prepare for the Friday lesson.
010 So during the week I did not do - if I did it was just be like shuffling
011 through notes but nothing major. But on Thursday I would do like half an hour/hour reading over the notes - because what we used to do as I said like a tutorial-ish lesson so I used to go through [the notes] to

e-learning system: learning at
Teacher: missed teacher expla
Teacher: shifted teaching strat
Teacher: provider of subject cc
learning independence~
learning management~
self-learning~

Coding by Transcript
utilizing QDA software

Appendix C3: *Related to Data Analysis* – The iterative process

Record of the first four iterations towards a description of the different ways participants account for their perceptions of teachers (and other students):

FIRST ATTEMPT (14th May 2013)

Category#	Teacher perceptions	Transcript#
1	The teacher prepares the learning materials and explains it to the students. Teacher contact is reduced because whereas in traditional systems all is done in class now the assignment of homework and related correction is all transferred to the online setting. The teacher remains important in the sense that s/he will still give the lecture for you but s/he will not be any further help *There is no awareness of change from the classroom face-to-face lecturing strategy but there is acknowledgement of technology use though this is not changing the teaching at all. Technology is only serving to distribute homework and avoid the correction of assigned work (reducing teacher contact)*	T3, T27
2	The teacher is the best source of information because of her experience but in e-learning the role is equally divided between the teacher and the e-learning system. The teacher is the controller of information. The teacher makes information available online and asks questions on it. The teacher needs to log on frequently, multiple times daily, to oversee what is being said by the students because she is the expert. She always has the answers to students' questions The teacher sees that the information being exchanged is correct. The teacher permits the students to become independent. *The teacher is the fount of 'correct' information. Through technology the teacher transmits information to the students, and checks that the information and other contributions brought in by students are correct. As explicitly said by a participant "the teacher is the controller of information"*	T2, T9, T19, T20, T21
3	The teacher is less important. Students can still carry on without a teacher not like in the class meeting were learning is all dependent on the teacher and what she transmits ... and what notes are taken down by the student. The teacher is less important because on the Internet there is a lot of information. You have everything – good and bad. There is no longer that particular person in mind whom I say to myself this is my teacher. She is going to teach me. The teacher is responsible to make the notes available online. The teacher is there to set up the learning materials, make sure that everyone is taking part and comes in when there is a problem, say someone asks a question. The teacher's work is done before the course starts ... more a question of	T10, T16, T23, T30

	helping students if they get stuck ... help them get it into their mind. Teacher also checks that everybody is doing their work. *The technology is considered as a means to transmit information efficiently. The teacher as a transmitter of information hence ceases to be that important during the course because information is now available online (even if it is made available by the teacher at the start of the course). The teacher comes in only if somehow the students need help to get it into their mind and to see that students are doing the assigned work for this to happen*	
4	The teacher prepares the learning materials and the resources beforehand. During the course the teacher's job diminishes to checking that what is being generated by the students is correct. The teacher presence during the course is still required so that when there is a question that no one can answer, the teacher comes to the rescue. The teacher is not expected to be there 24/7 but needs to logon often to check out that what is being said by the students is correct. The teacher checks that the answers that are being written are not wrong; and even answers can be misleading. The teacher even initializes students to engage in learning activity if they don't know where to start. The teacher designs and prepares the learning materials and resources beforehand, and during the course is there to help the students in case they get stuck and cannot understand because at times irrelevant of how much research the student cannot understand. And also to check that what is done is correct. The teacher's work is done before the course starts. More a question of helping the student where she gets stuck. The teacher explains the subject content to the students to help them get it into their mind. The teacher checks that everybody is doing the work ... but the teacher cannot do much to get students to work. *This category is very similar to the previous in the sense that the teacher prepares the learning materials and resources for the students. The teacher's job during the course is to check on the students that they are doing their work and what they are doing is correct. But in the case of this category more emphasis is on the teacher presence, the need for the teacher to be surveying students' activities, encouraging students to engage in prepared learning activities, and be there for students when they need help to understand subject matter.*	T13, T18, T28, T29, T30
5	The teacher is the organiser. She checks that what is being added by the students is correct. Even the students are teaching. The teacher should attend to those who go on FB and other "rubbish" during class-time. She organises everything and sees that all is moving according to the schedule. Maybe the role of the teacher is not so great as when she is teaching us everything from scratch because students are looking up things on the Internet, bringing in information but still, she has the important role to check students' contributions and correct them if necessary. The teacher needs to keep track of students and draws their attention when they are not doing their work.	T32

	Although this category is very similar to the previous two, there is consciousness that students are teaching each other ... and not after the teacher has explained it to them now. The inclusiveness of the other categories (which incorporate other themes of consciousness) is very evident here.	
6	The teacher as a facilitator of conversations. She directs and corrects the conversation where necessary ... even contributing and extending what the students manage to build amongst themselves The teacher organises the course-site – the frame which students then fill in with their work together. The teacher as a facilitator in the sense of an overseer that the intended communication is happening and the required co-production of learning material is taking place. The teacher presence is required so that students feel more secure that they are moving in the right direction. The presence of the teacher is of utmost importance because say if a student has a misconception but is able to convince others that s/he is right the mistake is going to spread. *The teacher is not only considered to be the organiser of the learning materials, and oversees all learning activity that goes on for correctness, but also facilitates and directs and extends conversations (wherein learning is taking place)*	T5, T15, T17,T24
7	The teacher is more like a student who is more knowledgeable. The teacher as another course participant who prepared the course. Instead of giving answers he helps you to find your own answers. The teacher is available anytime, approachable and teacher-student power-difference is felt less permitting students to feel more comfortable to communicate with the teacher. She is more of a friend of the students rather than a teacher because you are choosing things which the students enjoy doing. The teacher is part of your friends circle because ...the teacher is going down to your level. She is going to try to explain things the way you understand. You consider teachers more like friends who are trying to help you to understand the subject and how to operate technologies. The teacher is evolved. She comes closer to the level of the students using technologies – technology is something which comes natural to the students. Rather than buying notes for example. Something that helps the student, even mentally, to understand. The teacher is changed. *The teacher is now 'evolved', 'changed' in the sense that she is more approachable. The student is not met with the high tension of power-differential (the traditional classroom lecture carries with it) and hence is more confident to talk, to query and to comment with the teacher (and with others) about different learning theme. The teacher is still considered as the person behind the online learning materials, the overseer of online learning activities and the quality controller of the information exchanged, but is also considered as another participant of the course albeit more knowledgeable and learned.*	T1, T4, T25, T26, T35

SECOND ATTEMPT (12th June 2013)

Category#	Teacher perceptions	Transcript#
1	*Teacher as the source of all learning - in division online and offline* on the web-based course-site the teacher has prepared and organised the learning resources (particularly the course-notes and the worksheets), made these available for students to download and is a reference point for clearing difficulties in understanding subject content and problem-solving. But in the classroom the teacher is gone. The teacher is not lecturing, and does not put across that strictness which is required for the student to get on with her study-work.	T8, T10, T12, T13, T19, T21, T22, T27, T30, T33
2	*Teacher as director of all learning – in division online and offline* The teacher organises and prepares the learning materials online for the student. She is available for answering to students' difficulties where and when these arise. The teacher's role is divided between her and the e-learning system. The teacher plays an important role to explain and disseminate knowledge but this work is shared with the online system, and with students responding to the invitation to take part in online activities. The teacher is perceived to be giving an explanation of subject content to the students where necessary, and answering to students' problems and queries when and where these arise. The teacher is not considered to be responsible for the student's activeness in learning, but her presence is still considered to be an important influence driving students' learning.	T2, T3, T5, T7, T10, T13, T16, T19, T24, T26, T28, T32, T33
3	*Teacher as guide on the side – online & offline as a singular learning setting* The teacher prepares and organises students' learning, guides them through it, and supports them as necessary as they go along. Online and offline the teacher remains the same reference point for the student. The teacher remains very important to direct students' learning, and to ensure that what the students are sharing and co-producing online is correct.	T4, T5, T9, T13, T15, T17, T24, T29, T34
4	*Teacher as learned other - online & offline as a singular learning setting* The teacher is a knowledgeable other contributing to the generation of knowledge, and supporting others' learning by providing leads when in difficulty and helping to extend learning.	T1, T9, T17, T18, T20, T25,T35

THIRD ATTEMPT (27th June 2013)

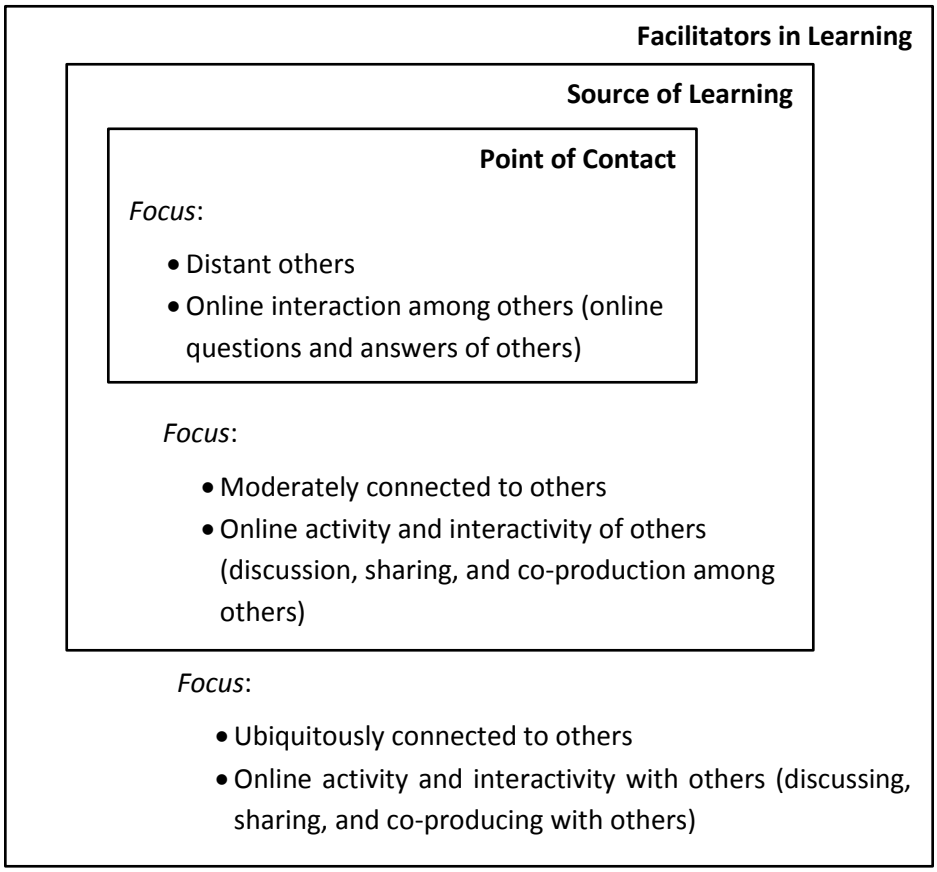
Category#	Teacher Perceptions	Transcript#
1	**Teacher as lecturer** The teacher's role is to give students a face-to-face lecture - explain course-notes to the students and work out pre-set problems with the students in class. The teacher is not lecturing, does not put across that strictness which is required for the student to get on with her study-work. With NL the teacher prepares and organises the online learning resources (particularly the course-notes and the worksheets), make these available for students to download but she is not seen in the classroom explaining the subject-content to students. She is not strict to make the student to do assigned study-work. *Tied to the offline despite proposal*	T8, T10, T12, T13, T19, T21, T22, T27, T30, T33
2	**Teacher as guide** The teacher is the main learning reference point for the student. The teacher has the important role to direct students' learning, to ensure that what the students are sharing and co-producing online is correct. Without the teacher there is no learning. The teacher organises and prepares the learning materials online for the students. She is available for answering to students' difficulties where and when these arise. The teacher plays an important role to explain and disseminate knowledge but this work is shared with the online system, and with students responding to the invitation to take part in online activities. The teacher is perceived to give an explanation of subject content to the students where necessary, and answers to students' problems and queries when and where these arise. The teacher is not considered to be responsible for the student's activeness in learning, but her presence is still considered to be an important influence driving students' learning. *Tied to the offline and the online as separate learning environments or, the offline and online as a single learning setting*	T2, T3, T4, T5, T7, T9, T10, T13, T15, T16, T17, T19, T24, T26, T28, T29, T32, T33 T34
3	**Teacher as knowledgeable and learned other** The teacher is a knowledgeable and learned other contributing to the co-accumulation, co-production and co-(re) creation of knowledge. The teacher supports students by providing a 'lead' to students when in difficulty and for helping them to further the learning. She is approachable, empathic and 'like a classmate'. *Tied to the offline and online as a single learning setting*	T1, T6, T9, T17, T18, T20, T25,T32, T35

FOURTH ATTEMPT: (29th December 2013)

I come back to answer this question after about a five (5) month break from the last iteration. Again I read through the transcripts. Now that I consider myself sufficiently familiar with the transcripts I skimmed through sections which did not address the question that I'm answering allowing myself to revive my consciousness of the context of relevant utterances. Although the participants generally consider other students and the teacher separately, yet the perception of other students and the perception of the teacher are observed approaching each other with more powerful perception. I will first discuss the outcome space and describe the emerging picture as a whole. Then I will elaborate some more on the emerging two-pronged hierarchy structurally mapping out the distinctions between perceptions of other students and the teacher. Subsequently I discuss the category of description separately.

From this iteration I'm seeing three categories of description emerging:

- Point of Contact: advancing the student as 'lone and directed'
- Source of Knowledge: advancing the student as 'assisted and guided'
- Facilitators in Learning: advancing the student as 'member of a learning group and facilitated'

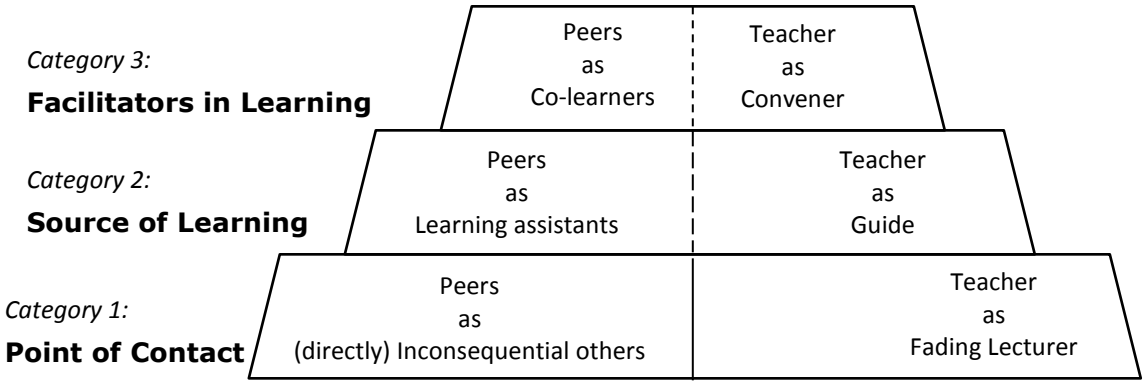


The 'point of contact' category has the student projected as 'lone and directed'. The student does not perceive other students to have anything to do with her learning, except for possibly answering

that minor question not worth bothering the teacher for. In complement the teacher is perceived as the knowledgeable person making herself an online reference point for contact in case of difficulties.
The 'Source of Knowledge' category has the student projected as 'assisted and guided'. In addition the student here perceives the visibility of other students' online learning activity and interactivity as a source of learning and a source of motivation for her to engage in learning activity. In complement the teacher is here perceived as organising the students' learning and reviewing students' online exchanges.
The 'Facilitators in Learning' category has the student projected as 'member of a learning group and facilitated'. Furthermore, the student aligning to this category perceives others as significant co-learners in her learning and the teacher as convener though simultaneously another member of the learning group.

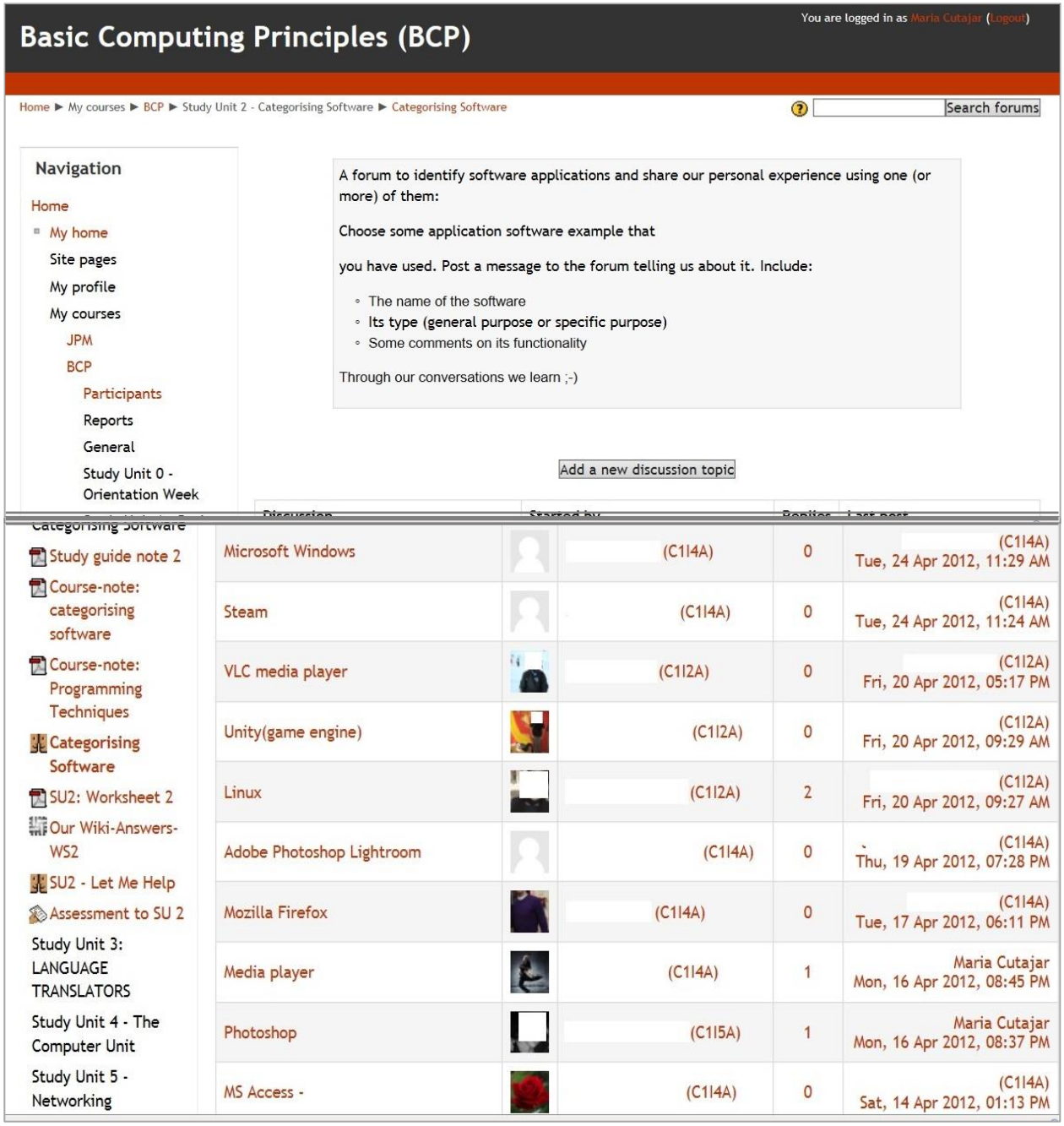
The figure below is a graphical representation of the outcome space as I'm seeing it emerging structurally. Together the focuses I identify provide an indication of the critical themes of expanding awareness of the student on the question of perception of others in learning – connectedness to others for learning, and engagement with others for learning.

All students distinguished between peers and teachers but with heightening consciousness this distinction diminishes pointing towards a convergence in the perception of others as contributors to learning as follows (though convergence is not present in students' accounts) :

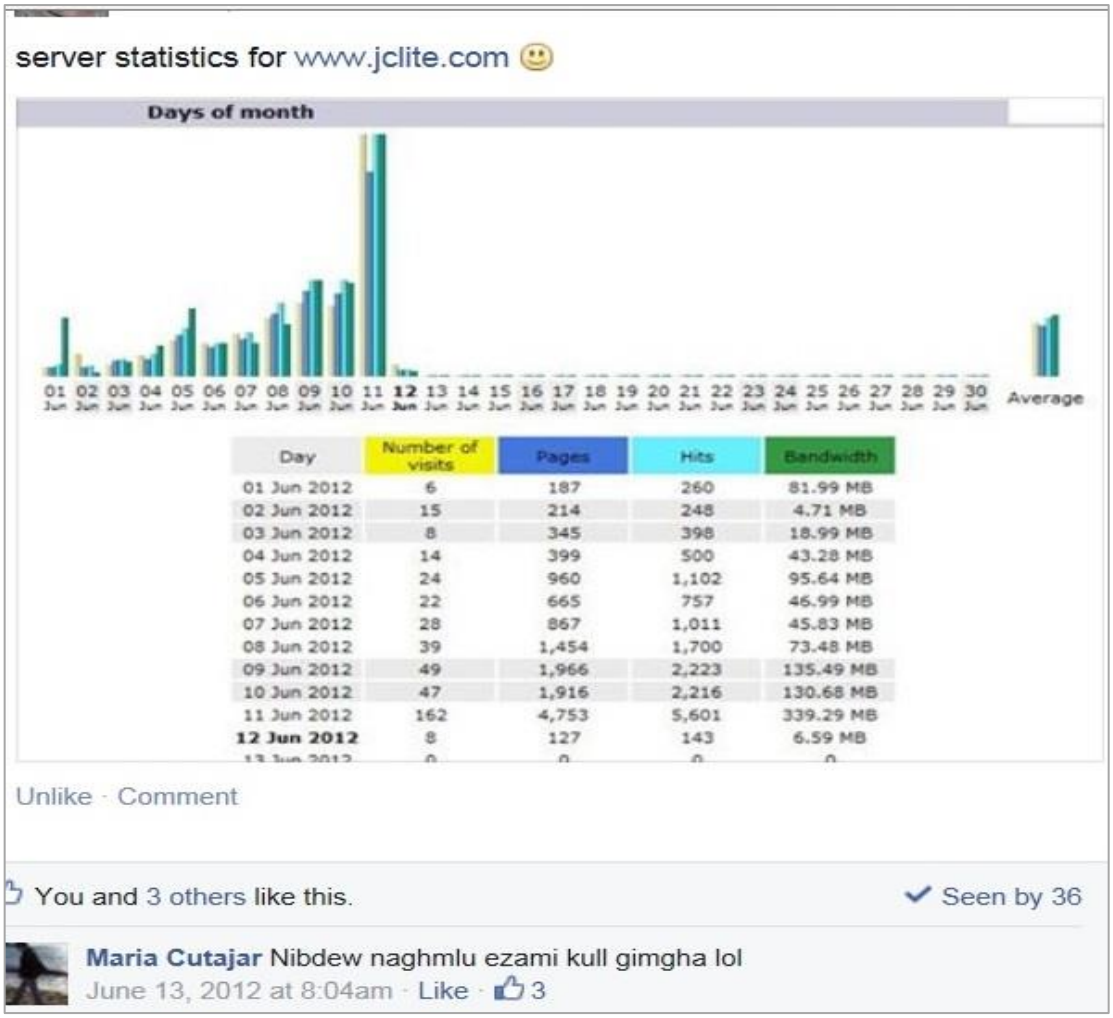


This research finding comes as an integral part of the hierarchical structure answering the current research question. I found it important to delineate this two-pronged hierarchy from the current data set emerge as approaching convergence at the most inclusive end of the hierarchy. From less powerful ways of perceiving others in learning to more powerful perceptions there is a shift from considering peers as of no (direct) consequential influence to personal learning and in tandem the teacher as a (waning) lecturer to a perception of others as collaborators in learning with the teacher considered "like a class-mate" (T1) and "like your friend" (T35) in learning. Hence although both peers and teacher may be considered as facilitating learning, the teacher is acknowledged as a convener whereas other students are considered as co-learners, though in total they are all being perceived as learning facilitators.

Appendix D1: *Online Learning Environment* – Moodle-based course-site



Appendix D2: *Online Learning Environment* – Facebook group



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