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Learner attributes in online environments: The impact of the individual on the outcome

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Abstract

Developments in online learning methodologies have been rapid in recent years and have promised improved education and training to an increasingly diverse cohort of students. The tertiary education sector is under increasing pressure to compete in an environment where globalisation of learning has resulted in the adoption of online delivery in order to compete in the education marketplace. This study investigates students' reactions to their learning environment while completing a program of study which is delivered fully online in a Western Australian University. The research utilises student questionnaire data which focussed upon factors relating to communication apprehension and competence, the experience of perceived loneliness, locus of control, collaboration by students regarding the learning experience, institutional support and the students' sense of self efficacy while completing a unit of study over one semester. The results indicated that students' personal perceptions of communication apprehension and competence were highly influential on their overall expectations of educational success in the unit studied. The students' sense of control over the learning materials and environment led to an increase in their belief regarding a timely and successful completion of the unit of study and their perceived ability to interact effectively with others.

Background

This paper focuses on describing and understanding the responses of a small case of students (n = 33) towards an adult learning program which was delivered fully online from a Western Australian University throughout semester 1, 2006. The case study sample comprised thirty three students who were engaged in the completion of units in the Training and Development Program. Typically the program attracts professionals who work in a number of settings including the health system, mining, the public service, Colleges of Technical and Further Education and private training providers. The program offers students the opportunity to complete both undergraduate and postgraduate courses which are aimed at professional educators and trainers in the field. The sample were all considered adult learners in that they were in full time employment in their own context during the study and most were involved with various family and community pursuits at the time of the research.

The Training and Development Program has been offered to students completely online since the late 1990s. It is designed to enhance teaching and learning in a variety of contexts as well as skill development in related fields such as curriculum development, professional practice, communication and reflective practice. The program was developed to complement Brennan's (2000) concept of utilising computers as tools to support the teaching and learning process. The initial decision to implement an online approach was influenced firstly, by the financial implications of continuing to offer face-to face teaching. Secondly, the online refinement and development of both programs adheres to what Craig (2002); Goddard (1996), and

Ruberg, Taylor and Moore (1996) suggest should influence teaching and learning online which includes the need to cater for students who actively avoid face-to-face communication and use online options to a greater extent. The majority of students are attracted to the current method of delivery and as adult learners the online nature of the program allows many of them to work at their own pace in between further ongoing commitments.

During Semester 1, 2006 students were invited to complete a thirty eight item questionnaire which had been developed by academic staff working in the program. The students were also given the opportunity to contribute any further comments regarding the program content and delivery in an open-ended item at the conclusion of the questionnaire. The aim of the questionnaire was to gather both quantitative and qualitative data related to the students' levels of comfort when learning through technology, their potential sense of apprehension when communicating online, their level of communication competence, their feelings of loneliness in the online environment, their locus of control, their willingness to collaborate with other students and the lecturer , their sense of institutional support and their conceptualisation of their own self efficacy in relation to their study.

Online delivery

In order to accommodate an increased mass of learners and demand for flexibility, universities are delivering a growing number of their courses through the Internet. The term "online learning" is often used to describe the wide variety of uses of the Internet for learning. While this term implies that learning is occurring online, this may not always be the case. An "online learning environment" may, in some cases, only be used for a repository of information (e.g., unit outline, lecture notes, assessment requirements, etc.) for students to access, print out, and read away from their computer. In these cases where learning is not actively occurring online, the term "class Website" may be more appropriate. A class Website may be built within an online learning management system (LMS), such as WebCT, or it may be a Website that does not utilise an online LMS. The term "online learning" may be used to describe active learning which occurs through the students' interaction with the learning materials via the Internet. Online learning can occur through meaningful interactions with other students and their lecturer using online communication facilities. Students are actively encouraged to engage with the online learning materials within a predetermined structure. For example, students may be required to read information about a particular topic on the screen, reflect upon what they had just read, and then post their thoughts onto the class bulletin board for other students to add their comments. Another example of online learning is where students are required to complete pre-programmed automated activities on the Internet

Much of the literature supports the notion that students who tend to avoid communication with fellow students and teachers in face-to-face contexts tend to contribute much more in online learning situations (Craig, 2002; Goddard 1996; Ruberg, Taylor & Moore 1996). While issues surrounding technologies and technology use are dramatically altering all areas of education and training in Australia, online delivery is still in a relatively embryonic stage. Ongoing evidence from the literature suggests however, that the maturation of online delivery will be realised once innovators begin to develop realistic strategic, pedagogical and commercial models as we move further into the twenty first century.

Brookes et al. (2001) argued that the most effective learning environments require educators "… to create and employ strategies to make learning active" (p. 108). Laurillard (2002) argued that a teaching strategy needs to be developed to form a "…bridge between what we know about student learning and what we should therefore do as teachers" (p. 62). To facilitate active online learning, suitable learning strategies need to be developed. However, authors such as Greening (1998) argued that "… generally, instructional designers either do not always appear to take advantage of the hypermedia technology, or do so without pedagogical foundation" (p. 2). Thus, the literature would suggest that there are gaps between the bodies of knowledge relating to learning theories, instructional design principles and research into student learning in higher education, and the application of this body of knowledge to the use of online learning technologies.

Salmon (2000) sees the term as 'online learning' as covering a range of technologies such as informatics, computer-assisted instruction and computer-mediated conferencing. Brennan (2000) defines it as requiring situations where computers support teaching and learning and where there is a mixture of computer support and online delivery or computer technology alone delivering education and training.

The adult online learner: A conceptual approach

Adults bring to the learning environment a wealth of experience. They also bring very clear ideas about themselves as learners, their expectations from the learning situation and pre-conceived ideas about what constitutes learning and teaching. They return to education seeking specific identifiable goals and usually expect an education that is either related to a job or a life situation and which stresses the application of knowledge rather than theory (Moore, 1980; Merriam & Caffarella, 1999; OECD, 2003). Adults are usually motivated to complete programs of study in the minimum amount of time, with their time commitments and ability to attend classes often being interrupted by other demands (OECD, 2003). Merriam and Caffarella (1999) believe that traditional assumptions about learning and teaching are to be challenged if we are to meet the needs of the adult learner. This stems from the belief that adult learners perceive themselves differently to the traditional student and expect to be treated as autonomous individuals. Self-directed learning and the concept of facilitation are at the core of adult education (Nesbitt, Leach & Foley, 2004). The idea that learning is facilitated as opposed to being taught is closely connected to the idea of adults directing their own learning. This becomes highly evident in the process of facilitating adult learning in online environments. Online learning has long been considered a method of distance education (Keegan, 1980). Accepted aspects of distance education such as self-direction, lifelong, accessible education which is open to all adults have been viewed as also pertaining to varying degrees of learning in online environments (Spencer, 1998). Online learning can also be viewed as potentially moving students away from the isolation of individualised study towards increased communication and a sense of 'classroom'. However the process remains written and textual in essence as opposed to oral and as a result many of the dynamics of the real classroom are not present. As available technologies have forced a re-conceptualisation of distance education they have also shifted the focus to a more student-centred, self directed learning approach and by doing so have highlighted the importance of the attributes of the learner on the outcomes of the learning process.

Learner attributes such as a willingness to communicate, locus of control, expectations of gaining higher grades, level of education upon entering the course, loneliness, collaboration and institutional support have been found to be related to their overall success in learning at a distance, in particular, in online environments.

Coggins (1988) found that students enrolled in external degree programs who had high levels of education upon starting the courses were more likely to complete than those who had lower level qualifications. These same students were also more likely to have higher expectations of success and higher results over time. Dille and Mezack (1991) studied locus of control and learning style as predictors of risk among distance education students. Their research involving 151 students enrolled in telecourses revealed that students with an internal locus of control were more likely to obtain higher results than those with an external locus of control. According to Garland (1993) other factors such as institutional procedures as well as course scheduling and pacing were seen to impact upon the student as a barrier to successful completion of online programs. A study by Pugliese (1994) revealed that other factors such as loneliness, communication apprehension, communication competence and also locus of control impacted on a student's likelihood of persisting with the preferred course. Many researchers agree that the student is central to successful online learning. It appears that learners who are comfortable with technology and interacting with others through technology are more likely to be successful in online programs. According to Brown (1998) further qualities include a willingness to interact effectively with peers and engage in group processes, an ability to communicate effectively through writing, a willingness to take risks and be creative and the ability to 'speak up' if problems arise.

Research method

The research is essentially quantitative in nature and relied upon the development and administration of a questionnaire instrument. The quantitative data were analysed using the Lertap application (Lertap: www.lertap.com). Qualitative data were collected through the use of an open-ended item at the conclusion of the questionnaire. The sample was asked to comment on any area of their online learning experience which they felt had not been covered in the bank of items. The qualitative open-ended responses were analysed using the Tropes application (Semantic Knowledge: http://www.semantic-knowledge.com/).The qualitative data were used to further examine additional information regarding the learners in the online environment. The uts of the content analysis tool provided qualitative semantic analysis of the open-ended responses including classification, keyword frequencies and linguistic coding of concepts and propositions in a relational and hierarchical context. This enabled the researchers to use both a-priori and emergent coding to aggregate common themes and the clustering of related themes to be compared and contrasted in order to gain an insight to the online learning experiences of the participants.

Data collection

During the middle of semester one in 2006, a questionnaire containing 35 Likert-type questions and one open-ended question was mailed out to all students who were enrolled in one or more units in the Training and Development Program. The questionnaire was also made available in an online format. The number of students receiving the questionnaire totalled 60. The number of completed questionnaires returned by post and online via email totalled 33, giving a response rate of 55%. While the response rate was not as high as expected, this was considered satisfactory

for the purposes of this study. The majority of the respondents remained anonymous and, hence, it was not know which units they were enrolled. The responses to the questionnaire were entered into a Microsoft Excel spreadsheet. The quantitative data was analysed using the Lertap application, and the qualitative open-ended responses was analysed using the Tropes application. The following sections describe these analyses.

Quantitative data analysis

Table 1 provides a scale analysis of the dimensions used in the student questionnaire. With each of the dimensions, Likert-type (1 = Strongly disagree, 2 = Disagree, 3 = Uncertain, 4 = Agree, 5 = Strongly agree) question items were selected for the scale analysis. Table 1 also reports the mean (the calculated average of the mean scores for each item within each scale) and median scores for each of the scales. The following Tables 2 through to 7 display the item statements and response rates for each item. For the purposes of this study, the analysis is based upon item-by-item rather than whole scale analysis.

Table 1   Scale reliability, mean ranges, mean, mode, median and standard deviation from initial student questionnaire analysis

Scale	No. of scale items	Range of items means		Scale					
		Lowest item mean	Highest item mean	Mean	Mode	Median	S.D.	Kurtosis	Skewness
Apprehension	5	2.60	5.00	3.78	4.00	4.00	0.58	-0.43	0.02
Competence	5	2.40	4.80	3.78	3.80	3.80	0.61	-0.56	-0.38
Loneliness	5	1.40	4.80	3.31	3.80	3.40	0.67	0.76	-0.45
Control	5	2.20	4.80	3.81	4.00	3.80	0.53	1.74	-0.95
Collaboration	5	2.00	4.40	3.27	3.00	3.20	0.57	-0.21	-0.33
Support	5	3.20	5.00	4.16	3.80	4.20	0.46	-0.94	0.17
Efficacy	5	2.80	5.00	3.95	4.00	4.00	0.52	-0.13	-0.13
Student n=33									

The following reports on the findings from the Likert-type items for the *Apprehension*, *Competence*, *Loneliness*, *Control*, *Collaboration*, *Support* and *Efficacy* scales presented in Table 1. Items 8, 9, 11, 15 and 19 have been negatively polarised. That is to say, the negatively polarised scores have been reversed so that they are scored and displayed as positive statements. Reverse scoring has been done for all Likert-type questions in the questionnaire which are interpreted as being negative statements about the participants' online learning experience. For example, item 11 is worded as a negative statement "I found the technology difficult to master". However, as it is reversed-scored, the mean score of 3.97 indicates that more participants disagreed with this statement from those which agreed.

Communication apprehension

The response rates to the items in the Communication Apprehension scale are presented in Table 2. Overall, the participants were reasonably satisfied with online communication and use of the Internet. The majority of respondents either agreed or strongly agreed with feeling comfortable engaging in the online environment (85%) and looked forward to discussing the unit content with their lecturer online (76%). Most respondents either agreed or strongly agreed that the unit built confidence with using the Internet (76%) and they had enjoyed discussing the unit content with their fellow students (53%). Approximately half of the participants (54%) were not worried about typing their responses to the online discussions.

Table 2   Statements and response rates for communication apprehension

Item	Statement	1	2	3	4	5	other	pol.	mean	s.d.	cor.
Q4	I feel comfortable engaging in the online environment.		3%	12%	52%	33%		+	4.15	0.74	0.44
Q5	I look forward to discussing the unit content with my lecturer online.		6%	18%	52%	24%		+	3.94	0.81	0.68
Q6	This unit built my confidence with the use of the Internet.		12%	12%	64%	12%		+	3.76	0.82	0.20
Q7	I enjoy discussing the unit content with my fellow students online.	3%	12%	21%	42%	21%		+	3.67	1.03	0.55
Q8	I worry about typing my responses to the online discussions.	15%	39%	15%	30%			-	3.39	1.07	0.23

(1 = Strongly disagree; 5 = Strongly agree; other = null response)

Communication competence

Table 3 presents the response rates to the questionnaire items in the Communication Competence scale. The respondents generally perceived that their level of competence with communicating online and comfort with using the Internet for learning was reasonably satisfactory. Approximately half of the participants perceived that they did not have difficulties with tying their thoughts in the online session (51%), and most (79%) found that typing their thoughts in the discussion forum helped to clarify ideas. The majority of respondents did not have difficulties with mastering the technology (82%) and were comfortable with learning through the technology (75%). A large portion of the participants (82%) perceived that the interactions they had with their lecturer had an affect on the end results of their assignments.

Table 3   Statements and response rates for communication competence

Item	Statement	1	2	3	4	5	other	pol.	mean	s.d.	cor.
Q9	I find that typing my thoughts in the online discussion is difficult.	9%	42%	6%	39%	3%		-	3.15	1.13	0.55
Q10	I find that typing my thoughts in the online 'discussion forum' helps to clarify my ideas.	3%		18%	70%	9%		+	3.82	0.72	0.40
Q11	I found the technology difficult to master.	30%	52%	3%	15%			-	3.97	0.97	0.27
Q12	I am comfortable learning through technology.		3%	21%	36%	39%		+	4.12	0.84	0.49
Q13	The interactions that I had with my lecturer affected the end result of my assignments.	9%	6%	3%	55%	27%		+	3.85	1.16	0.17

(1 = Strongly disagree; 5 = Strongly agree; other = null response)

Loneliness

The participants' responses to the items in the Loneliness scale are shown in Table 4. Although the participants appeared to be approximately evenly split on the concept of

loneliness, their lecturer appeared to have helped them feel less lonely. While 45% of the respondents either agreed or strongly agreed that they preferred to work alone, 39% either strongly disagreed or disagreed with this statement. While half of participants either strongly agreed, agreed or were uncertain whether they were isolated from other online students (51%), the vast majority (91%) perceived that the responses they received from their lecturer helped them with feeling less isolated. Although 48% of the respondents either agreed or strongly agreed to feeling connected to other online students, only 27% were likely to share their thoughts regarding the online unit content.

Table 4   Statements and response rates for loneliness

Item	Statement	1	2	3	4	5	other	pol.	mean	s.d.	cor.
Q14	I prefer to work alone when learning.	12%	27%	15%	36%	9%		+	3.03	1.22	0.29
Q15	I feel isolated from other students in the online environment.	6%	42%	21%	21%	9%		-	3.15	1.10	0.70
Q16	I feel connected to fellow students in the online environment.	3%	18%	30%	42%	6%		+	3.30	0.94	0.67
Q17	I am more likely to share my thoughts regarding the unit content in an online environment.	6%	18%	48%	24%	3%		+	3.00	0.89	0.43
Q18	The responses I got from my lecturer helped me feel less isolated.		6%	3%	70%	21%		+	4.06	0.69	0.34

(1 = Strongly disagree; 5 = Strongly agree; other = null response)

Locus of control

The responses to the items in the questionnaire referring to the Locus of Control scale are presented in Table 5. The participants, on the whole, appeared to be rather positive about their locus of control. Most of the sample did not perceive to have difficulties with online learning (66%) and persisted with their online studies even when the content was difficult to understand (79%). The majority of respondents understood from the online content what they were expected to learn (91%) and believed that they had control over the pace of their studies (90%). Approximately half of the sample initiated contact with other students in the online environment (55%).

Table 5   Statements and response rates for locus of control

Item	Statement	1	2	3	4	5	other	pol.	mean	s.d.	cor.
Q19	I find learning online difficult.	21%	45%	9%	21%	3%		-	3.61	1.13	0.56
Q20	I understood from the online content what I was expected to learn.			6%	73%	18%	3%	+	4.09	0.51	0.43
Q21	I persist with my study online even when I find the content hard to understand.		3%	18%	73%	6%		+	3.82	0.57	0.47
Q22	I believe I have control over the pace of my study.		6%	3%	45%	45%		+	4.30	0.80	0.40
Q23	I initiate contact with other students in the online unit.	3%	27%	15%	52%	3%		+	3.24	0.99	0.20

(1 = Strongly disagree; 5 = Strongly agree; other = null response)

Collaboration

Table 6 presents the samples' responses to the items in the Collaboration scale. As with the Loneliness scale, apart from item 28, the respondents were nearly evenly divided with their perception of collaboration. Although half of the participants (54%) either agreed or strongly agreed to the statement that they are group orientated, only 30% agreed to the statement that the online approach used in the course provided opportunities for them to work in groups while a further 36% were uncertain. While

one-third (33%) of the sample were uncertain whether the online learning environment allowed them to build relationships with other students, 39% agreed or strongly agreed that it did allow relationship building to occur while a further 27% disagreed or strongly disagreed. Most of the respondents (82%) either agreed or strongly agreed to the statement that online discussions with their lecturer and other class members were valuable.

Table 6   Statements and response rates for collaboration

Item	Statement	1	2	3	4	5	other	pol.	mean	s.d.	cor.
Q24	My learning style is group orientated.		36%	9%	48%	6%		+	3.24	1.02	- 0.03
Q25	The online approach used in the Graduate Certificate allows me appropriate opportunity to work in groups.	3%	30%	36%	30%			+	2.94	0.85	0.58
Q26	The online environment allowed me to build relationships with other students.	3%	24%	33%	36%	3%		+	3.12	0.91	0.77
Q27	Fellow students contribute to my achievement of learning goals.		24%	39%	36%			+	3.12	0.77	0.46
Q28	I found the online discussions with my lecturer and other class members valuable.	3%	3%	12%	64%	18%		+	3.91	0.83	0.45

(1 = Strongly disagree; 5 = Strongly agree; other = null response)

Institutional support

The responses to the items in the Institution Support scale are displayed in Table 7. Overall, the respondents were quite positive towards the support they had received. The majority of participants (88%) agreed or strongly agreed that they felt supported by the Western Australian University in their studies. Most of the sample agreed or strongly agreed that their onsite facilitator was supportive of their study (75%), that their lecturer nurtured an online learning community (88%), and that they had received adequate feedback from their lecturer regarding their progress (88%). The majority of the sample (85%) agreed or strongly agreed that the learning materials were easy to access.

Table 7   Statements and response rates for institutional support

Item	Statement	1	2	3	4	5	other	pol.	mean	s.d.	cor.
Q29	I feel supported by Curtin University in my study.			12%	70%	18%		+	4.06	0.55	0.55
Q30	My onsite facilitator is supportive of my study.			21%	42%	33%	3%	+	4.09	0.75	0.55
Q31	My lecturer nurtures a learning community in the online environment.			12%	58%	30%		+	4.18	0.63	0.45
Q32	I received adequate feedback from my lecturer about my progress.			12%	36%	52%		+	4.39	0.69	0.52
Q33	Learning materials are easy to access.		6%	9%	55%	30%		+	4.09	0.79	0.27

(1 = Strongly disagree; 5 = Strongly agree; other = null response)

Self efficacy

Table 8 presents the responses to the items in the Self Efficacy scale. While the majority of the sample perceived that they had reasonably high levels of self efficacy, their effectiveness with interacting with peers was not as high (item 37). Although 85% of the participants agreed or strongly agreed to the statement that they were willing to speak up when they had a problem with online learning, only 39% agreed or strongly agreed that they interacted effectively with their online peers while a further 36% were uncertain. Most of the respondents agreed or strongly agreed that they expected to achieve high level results for their assignments (69%), that they

would complete their study (93%), and that they took more responsibility for their own study in an online learning environment (88%).

Table 8   Statements and response rates for self efficacy

Item	Statement	1	2	3	4	5	other	pol.	mean	s.d.	cor.
Q34	I am willing to 'speak up' when I have a problem with my online learning.		6%	9%	61%	24%		+	4.03	0.76	0.37
Q35	I expect to achieve high level results for my assignments.		3%	27%	39%	30%		+	3.97	0.83	0.50
Q36	I believe I will complete my study.			6%	45%	48%		+	4.42	0.60	0.50
Q37	I interact effectively with peers in the online environment.	3%	15%	42%	36%	3%		+	3.21	0.84	0.51
Q38	I took more responsibility for my own learning studying online.		3%	9%	61%	27%		+	4.12	0.69	0.59

(1 = Strongly disagree; 5 = Strongly agree; other = null response)

Summary of the quantitative analysis

The quantitative analysis examined the responses to the five-point Likert-type items in the questionnaire within the scales of *Communication Apprehension, Communication Competence, Loneliness, Locus of Control, Collaboration, Institutional Support* and *Self Efficacy*. Overall, the respondents were reasonably positive towards their online learning experiences in the Training and Development Program. Although they perceived that they were reasonably comfortable with using the Internet and communicating online, some showed concern with typing their thoughts and responses to the online discussion forums. The participants' level of competence with communicating online and comfort with using the Internet for learning was perceived as being satisfactory. The respondents appeared to be approximately evenly split on their perception regarding concepts relating to loneliness and collaboration. However, most agreed that their lecturer appeared to have helped them with feeling less lonely and found that discussions with their lecturer and other class members as being valuable. The majority of the participants perceived their locus of control as being rather positive and felt that the institutional support they had received was very positive. Although most of the respondents perceived that they had high levels of self efficacy, their own perceived effectiveness with interacting with peers was generally not as high.

Qualitative data analysis

The last item on the questionnaire asked the respondents to write any comments regarding the Likert-type questions or their online learning experience in general. The responses made by the sample to this open-ended item were analysed using the computer aided content analysis application, Tropes. This tool provided qualitative semantic analysis of the full written responses including classification, keyword frequencies and linguistic coding of concepts and propositions in a relational and hierarchical context. This enabled the researchers to use both a-priori and emergent coding to aggregate common themes and the clustering of related themes to be compared and contrasted in order to gain an insight to the feelings and attitudes of the sample towards the course and the online environment in general. Categories of words by frequencies of twenty five percent or more were examined in context of the open-ended responses. These were deemed by the researchers to be the responses most likely to provide the strongest representation of the key concepts as described by the sample. Word categories of twenty five percent and less were not likely to provide such insights into the major thematic constructs as they emerged in relation to the

experiences of the sample while engaging in the online learning environment. Table 9 below presents the most frequently occurring word categories that represent twenty five percent or higher of the total language selection by the respondents.

Table 9   Word category selection by frequency

Category	Selection %	Respondents
Learning	58.3	14
Course	41.7	10
Teaching	33.3	8
Unit	29.2	7
Feedback	29.2	7
Discussion	29.2	7
Materials	25.0	6
Feeling	25.0	6
Assignments	25.0	6

The most frequently occurring category was *Learning* (frequency = 58.3%). The sample indicated that concepts related to learning were important to them when considering their engagement with the online program. In context the category emerged as being important at a number of levels. The sample indicated that the nature of the online delivery enabled them to take more responsibility for their learning. As adult learners they were more inclined to present with an internal locus of control and the most prominent language category suggested that the online environment provided them with the opportunity to experience a sense of control over their engagement with the communication and the materials overall. The flexibility of the delivery was considered a positive aspect of their learning as the sample were engaged in full time employment and they were able to control the timeframe within which they interacted with the materials. The self-directed nature of the online process encouraged the participants to engage in a cycle of continuous reflection which they perceived had led to deeper and therefore more satisfying learning.

The second most frequently occurring language category was *Course* (Frequency = 41.7%). The sample conceptualised the learning and teaching experiences in terms of the structures and organisation inherent within a traditional notion of a course. They had experience with semester constraints and recognised the need for additional course materials to supplement the initial interaction. As adult learners they understood that ongoing attention to additional reading and discussion would enhance their overall results and personal satisfaction. Some comments in context indicated that while the online delivery was appropriate a number of respondents had found it challenging to read all discussions and follow threaded communication. They found it difficult at certain times to feel a part of the group but accepted that this was a function of their own learning style and a preference for actually being able to hear the lecturer and peers speaking. The sample noted their preference on occasion throughout the course to read the written text provided by other students rather than submit their own.

Teaching was the third most frequent language category (frequency = 33.3%). When conceptualising their responses to their online experience components of the teaching process and aspects of the interaction with the unit lecturer were prioritised as having significance for the sample. Frequency of interaction with the lecturer/online facilitator was important in order to build a sense of continuity and community in the learning process. This assisted the sample to maintain direction and prevented time being wasted while imagining the direction to take regarding a particular problem solving path. Most found the teaching process employed by the lecturer to be sound and representative of a professional approach. It was important for the participants to be able to engage in deep learning through focus questioning and attention to detail. The sample suggested that the nature of the online environment had enabled them to develop far more intimate relationships with their lecturer and that they were more inclined to offer personal information particularly through the email embedded in WebCT. They viewed this as an important and expected function of teaching online.

The category *Unit* was determined as the fourth most frequent (frequency = 29.2) along with *Feedback* and *Discussion.* The respondents conceptualised the interactions they had been engaged in as that representing a unit of work. They referred to the fact that they had found the unit interesting and worthwhile and had also experienced a certain ease while navigating the materials. A number of comments indicated the level of interactivity was appropriate to the mode of delivery and that any increase in the posted discussions would possibly have resulted in confusion and a 'slowing up' of the communication process. The sample suggested that frequency not necessarily length of discussions enhanced the feeling that they were part of a group and this increased the sense of reality as it better represented the natural flow of verbal conversation. They had encountered more discussion postings than they had expected which suggested that their previous experiences of learning online had been limited. Discussion was also seen to be part of the feedback process and this was deemed essential to create a feeling of the online 'space'. It was only when feedback given through written text emerged that the sample felt as though they were engaging in the 'reality' of a 'class'. As professionals in their field they believed the feedback offered by peers on their individual postings was often more useful than that given by the lecturer. Not being able to actually see the reactions of peers to postings however had proved to be frustrating in a number of instances.

The fifth most frequent language category included *Materials, Feeling* and *Assignments* (frequency = 25.0%). The sample had focussed upon the materials as a key component of their enjoyment or otherwise of the learning process. Their expectations of the overall quality of the materials were high. Some had previously studied in what they perceived had been online environments. Their experiences had included the simple uploading of lecturer materials into programs such as WebCT and they had interpreted this as studying in an online environment. Comments regarding materials indicated that the sample had enjoyed the complexity and depth of the modules involved in the unit and the ready access to appropriate readings. Their feelings towards study, themselves and components of the program were significant as far as their 'personal view' of the online experience was concerned. A number of comments indicated feelings of inadequacy and nervousness particularly when posting discussions early in the semester, however prompt, positive feedback from peers and the lecturer had helped individuals to overcome this. Other feelings included enjoyment, a sense of achievement, a sense of control and the encouragement of a reflective response which enabled the participants to make

connections between the new learning and their world of work. The word *Assignments* featured prominently as naturally it represented one of the major concerns of the group. The sample expressed a certain amount of apprehension (particularly those who had only recently returned to formal study following a substantial break) regarding the structure, depth and requirements of the assessment tasks. Many comments suggested that the links made between the assignment topics and the employment reality experienced by the sample helped to make the completion of the work a more personal and transferable experience. Prompt return of assignments assisted students to actively work towards an improved attempt in the future even though on occasion they felt they were under pressure to submit written work that was not perceived to be high quality due to pressures associated with full time employment.

Figure 8 displays the relationships between each of the key language concepts that emerged as a result of the word category analysis. The major concept *Learning* was associated most strongly by the sample to *Course and Assignments.* When the participants were asked to consider their online experience the concept of *Learning* was most significant. When discussing learning the language used by the sample was most likely to include references to course structure, the perceived difficulty level associated with assignment completion and the relationship between assignment tasks and the reality of workplace for each individual. The concept *Teaching* was also linked less strongly to the concept of *Course* and therefore *Learning.* It is interesting to note that when discussing learning and teaching experiences the analysis showed that the sample was less likely to associate more personal concepts such as *Feelings* and *Feedback* with the more practical aspects of the delivery of the online learning environment. The age demographic may have influenced the sample's focus on language associated with the actual structural parameters within which they worked with the materials. The content analysis revealed that as the majority of the respondents were in full employment at the time of the research their major concerns appeared to be related to the pragmatic aspects of learning such as internal loci of control over their learning, ability to successfully complete tasks and finding time to communicate effectively. The concepts of *Materials* and *Unit* were associated less strongly with *Learning* than the relationship between *Learning, Course* and *Assignments.* As adult learners it appeared that the sample conceptualised whole course pressures, completion and assignment tasks more often than components such as units and feelings associated with the self.
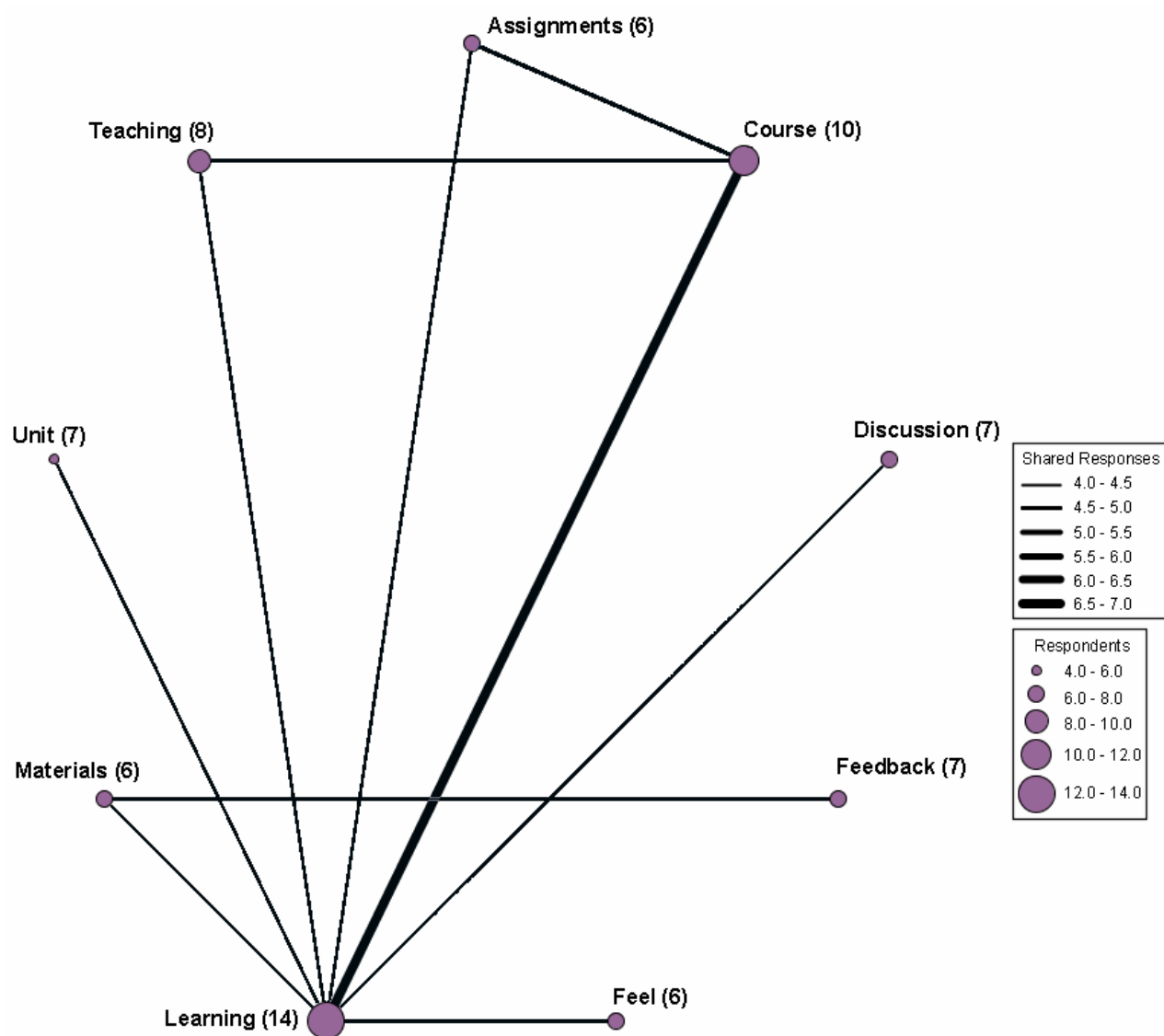
Figure 1   Key language concepts and their relationships

Summary of the qualitative analysis

The analysis of the qualitative data revealed that the sample was concerned with a desire for a sense of control over their learning. Learning emerged as a key concept and the control sought and enjoyed by the respondents included the flexibility to engage with the materials within a timeframe that suited the individual. As the majority of the sample were in full time employment the interaction with the unit was best achieved at times which suited each student. The learning was conceptualised as personal in that individuals felt as though they were given the opportunity to interact in a deep and reflective manner and were more likely to involve themselves in communication in which they revealed more about their personal 'worlds' than they would necessarily do in face-to-face learning environments. The materials were considered to be easy to navigate and feedback and discussion postings were deemed essential in order to successfully complete set tasks and maintain the self-directed nature of the learning. Although a number of comments indicated that initially online learning skills such as typing written discussions and responding to peers in the online environment were not recognised as being high, over time the sample felt that these

had improved and that they were more likely to engage in the various opportunities for communication presented through this mode of delivery.

Conclusion

The quantitative and qualitative analyses, as conceptualised within the survey scales, revealed findings that were very similar in nature. Within the concept of *communication apprehension*, the sample showed some anxiety, particularly in the initial phases of their study, towards typing their thoughts and responses in the online discussion forums. With time, however, they became more comfortable and familiar with communicating online and were more likely to engage in the various opportunities provided with this form of communication. For the concept of *communication competence*, the participants felt reasonably comfortable with their competence in using the online environment for communication. Although some respondents had perceived their effectiveness with interacting with peers as being somewhat low, they believed that this had improved as the semester progressed. Under the concept of *loneliness*, the learning was conceptualised as personal and participants felt that that they were given the opportunity to interact more deeply and reflectively and reveal more about their personal 'worlds' than they would do in face-to-face learning environments. Although several participants felt lonely during their study, their online lecturer helped them feel less lonely through online discussions with their lecturer as well as with other peers. This type of communication and interaction with the unit suited the majority of participants who were in full time employment in that they could engage at times which best suited each individual. Within the *locus of control* concept, the respondents appeared to be rather positive about their perception of locus of control. The concept of 'learning' appeared as an important concept, and the control sought and enjoyed by the sample included the flexibility offered through online learning to engage with the materials within a timeframe that suited the individual. The feedback received and the online discussions were important for maintaining self-directed learning. For the concept of *collaboration*, half of the participants perceived that the online learning environment allowed them to build relationships with other students. However, the majority of respondents felt that online discussions with their lecturer and other class members, including feedback received, were valuable. Under the self *institutional support* concept, the sample felt that the institutional support they had received was very positive, particularly with the feedback from their online lecturer regarding their study progress. Within the concept of *self efficacy*, the respondents perceived that they had high levels of self efficacy and believed that the ease in which the materials could be navigated, the feedback received and the discussion postings were essential in order to successfully complete set tasks.

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