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Terry Anderson
Editor, IRRODL

Before introducing the 11 interesting and eclectic articles in this general issue, I wanted to talk about IRRODL indexing and improvements in our presentation format and function.

Soon after we launched IRRODL in 2001, we were informed by potential authors of the necessity for articles to be published in journals that are included in Thomson's Social Science Citation Index (SSCI), known then as Thomson ISI. In many countries, inclusion in SSCI is mandatory for publications that are valued by institutional and national assessors of research. Since our authors freely license work for publication in this journal, the only reward for the considerable effort involved (besides, of course, untold amounts of fame!) is that the publication should be counted for tenure and promotion and for funding from granting agencies.

SSCI is run as a fee service by the Thomson-Reuters publication empire ($13.1 billion annual sales, 55,000 employees) and subscribed to by most academic research libraries. Journals are evaluated for inclusion in SSCI by a formal investigation. One of the rules for inclusion in the index is that the journal must have been publishing regularly for a minimum of three years. Thus, in 2004, I dutifully completed the application form to have IRRODL indexed by SSCI. For years I received no responses to my follow-up emails requesting results of the evaluation. No rejection or failure of the review – just nothing! In 2009, I was able to begin a series of email exchanges with an editor from Thomson-Reuters and this spring we received notice that IRRODL would be indexed beginning with the first issue of 2010!

Thus ends a long struggle and one of my favorite rant topics. I still contend that as academic researchers we have given far too much control over our affairs to a commercial publisher. However, I am pleased to be indexed and to have this measure of quality applied to our

Journal.

IRRODL managing editor, Brigette McConkey, continues to innovate with our presentation format. You will notice in this issue, we are including authors' pictures in an attempt to add a visual and personal link to those who contribute to IRRODL. You will also notice that we have installed a Google translate widget so that any of the HTML pages can be translated into any of the hundreds of languages supported by this free service. We welcome feedback from readers fluent in more than English on the quality and usefulness of these translations.

You will also notice that the number of subscribers to IRRODL continues to grow (nearly 5,500) and that we are averaging over 600 visits per day from readers in every continent. You may be interested in following the ClustrMap link from the main page to see a detailed list of recent visitors and their locations.

Now turning to IRRODL issue 12.5. This issue is certainly one of the strongest we have published. Rather than try to summarize the nine research articles, one research note, and one book review, I will merely list the topics. I hope doing so encourages you to retrieve the full text of those subjects that tweak your interest.

Research articles in this issue cover study orchestrations (a nice alternative to learning styles), the business of publication of open textbooks, the liminality (don't worry I had to look up the word too!) experienced in real-time online communications, a critique of the familiar community of inquiry model and the perhaps oversold impact of social presence, an evaluation of role play learning designs, a review of the use of video in distance education trades instruction, an important investigation of time-on-task while learning, an analysis of cross-cultural influences on instructional design practices, and a fascinating qualitative study on changes in student-teacher, student-content, and student-software interaction at a distance. We also include a research note on the value of start-of-class surveys and a book review that looks at the impact of e-learning on globalization of higher education.

As always, issue 12.5 features contributions from many countries. There are three articles from the USA, two from Sweden, and one each from Canada, New Zealand, United Kingdom, Ghana, and Spain.

We are confident that you will learn from and enjoy this issue! For those readers in the northern hemisphere, we also wish you a relaxing and reflective summer holiday.

Athabasca University

Study Orchestrations in Distance Learning: Identifying Dissonance and its Implications for Distance Educators

Bill Anderson, **Scott W. F. Lee, Mary G. Simpson**, and **Sarah J. Stein**
University of Otago, New Zealand

Abstract

The exploration of study orchestrations emphasises students' active participation in learning, describing the ways in which they marshal the resources available to them in response to their learning environment. This study reports the identification of study orchestrations in a group of distance students and identifies the existence of dissonant study orchestrations, which previous research has linked with poor achievement, in approximately one-fifth of the group. Data came from responses by 176 students to the ASSIST questionnaire. The data was subject to factor analysis to ensure commensurability with previous studies, and then cluster analysis was used to identify groups with similar study orchestrations. Four clusters were identified. One of these was clearly dissonant, pointing toward problematic links between learning environments and student approaches to study. The implications of dissonant study orchestrations are explored and further research is suggested, along with implications for the practice of distance educators.

Keywords: Approaches to study; study orchestrations; metacognition; higher education

Introduction

The exploration of student approaches to learning and studying has developed markedly since the first work was undertaken in the 1970s. Although it did not use the term approaches to study, Marton and Säljö's (1976) paper is commonly regarded as the initial work in the area. Since then, several shifts in thinking have brought about useful reconceptualisations. From the early consideration of the two main forms of learning approach—deep and surface—the area widened to consider approaches to study and incorporated the notion of a strategic approach to studying (Entwistle & Ramsden, 1983). Understanding approaches to

study can be useful for several reasons. A stronger call to justify public expenditure on tertiary education and to raise course completion and retention rates, especially for distance students, brings renewed focus to the importance of student study strategies. Additionally, there is evidence that teachers, and the study context they help create, have both direct and indirect impacts on the approaches to study adopted by students and on their academic achievement (Trigwell, Prosser, & Waterhouse, 1999).

Research into approaches to study is mostly undertaken with on-campus students. Perhaps because of their relative inaccessibility, distance students have not often been sought as participants in this type of research. Richardson's (2000, 2005) work in this area and his work with colleagues Morgan and Woodley (1999) are exceptions, having focused on distance students, their approaches to study, and the relationships between approaches to study and other factors, including the academic environment and academic quality.

Recognizing the importance of how students perceive study contexts and how they combine various approaches to study has led to consideration of study orchestrations (Meyer, 1991). These contextualised patterns of engagement in learning can be theoretically interpretable, or consonant orchestrations, which demonstrate "harmonious combinations of deep approaches and positive perceptions of teaching" (Entwistle & Peterson, 2004, p. 422), or dissonant orchestrations, which exhibit unanticipated or theoretically contradictory sets of responses. Recognition of dissonant study orchestrations has shed light on the relationship between approaches to study and study success (Meyer, Parsons, & Dunne, 1990a).

The work reported here arises from a larger investigation concerning student support. In that larger investigation, the focus was on ways in which distance students sought cognitive and affective support for their learning beyond their courses and the institution in which they were enrolled. One area of investigation involved examining the relationship between individual study orchestrations and student-identified support mechanisms and required identification of study orchestrations within the research participants. This article reports the identification of study orchestrations and the extent of the existence of dissonant orchestrations within the research sample and discusses the implications of our findings for distance educators.

Consideration of dissonant study orchestrations within distance student populations has been neglected to date. This article provides initial evidence that dissonant study orchestrations are found within distance student populations and suggests additional study would be valuable. The first section below considers literature related to approaches to study in general and is followed by a section focusing on approaches to study in distance education. Following that, orchestrations are discussed and the topic of dissonant orchestrations is considered in more detail. Subsequently, results of a factor analysis of distance student scores on the Approaches and Study Skills Inventory for Students (Entwistle, Tait, & McCune, 2000) and a cluster analysis based on the ASSIST data are presented and discussed.

Approaches to Study

A number of inventories attempt to assess differences in how students study and learn. Although development of these inventories arose for different purposes and drew on differing theoretical perspectives, Entwistle and McCune (2004, pp. 8–9) suggest the inventories draw on the same three underlying dimensions: deep/meaning, surface/reproduction, and achieving/strategic approaches to study. There is argument against the need for the achieving/strategic dimension (Richardson, 2000). Despite the acknowledged empirical relationship between the achieving/strategic dimension and the deep/meaning dimension, retention of the former reflects the conceptual distinction between learning processes focused on developing understanding and self-regulation of aspects of the study process (Entwistle & McCune, 2004). Based on these dimensions, three approaches to study are, in brief, characterised as follows: (1) a deep approach reflects an intention to seek understanding and meaning through relating ideas and using evidence; (2) a strategic approach is characterised by a focus on studying effectively in order to achieve good grades; and (3) a surface approach appears where the learner focuses on getting through the course, reproducing content by memorising and learning isolated facts. Approaches to study indicate the various ways that study intent and study process are combined.

Higher-education institutions have a responsibility to "create learning environments that promote . . . deep-level learning" (Kreber, 2003, p. 59) because of the impact this has on the skills necessary for self-directed and lifelong learning. However, evidence that this is possible is inconclusive. Recent studies show both increased use of a deep-learning approach (Walker et al., 2009) and no change or a decline in deep-approach scores (Ballantine, Duff, & McCourt Larres, 2008; Reid, Duvall, & Evans, 2005; Struyven, Dochy, Janssens, & Gielen, 2006) as a result of formal educational experiences designed to enhance deep learning. Attempting to account for this uncertainty, Roderiguez and Cano invoke the effect of time and report a decline in the use of a surface approach over time (2007), noting that although students may initially use a surface approach in tertiary study, they are likely to shift toward a deeper approach as they adapt to the demands of such study. However, the tendency for students to move in the opposite direction over time, that is, toward greater use of surface approaches, has also been reported (Cano, 2005; Gow & Kember, 1990).

There are several key understandings about approaches to studying, despite the current uncertainty. Drawing from Entwistle (2000), we note the following: Approaches to study are recognised as useful constructs, but individual approaches to study are not considered to be stable across different courses. There is evidence, however, that students are somewhat consistent in their approaches. There are strong relationships between poor academic achievement and a surface approach to study, in combination with a lack of strategic regulation, and between good academic performance and a deep approach, provided assessment tasks require high levels of understanding. There is also evidence that the balance of learning processes used by students adopting a deep approach to study will change depending on the subject being studied (Entwistle & Peterson, 2004). Finally, there is clear evidence of a relationship between teachers' approaches to teaching and students' approaches to learning (Trigwell et al., 1999), such that an information transmission approach to teaching is

strongly associated with a surface approach to study.

Approaches to Study in Distance Education

Following earlier studies involving distance students, Richardson, Morgan, and Woodley (1999) undertook a major study of approaches to studying in distance education. Their findings can be summarised as follows: (1) distance students are commensurable with campus-based students in terms of their approaches to studying; (2) distance students are more likely to adopt approaches to study that more closely correspond with the espoused aims of higher education; (3) gender, age, and academic discipline impact the study approach of distance students; and (4) study approach is related to pass rates and final grades (a surface approach is negatively related to these measures) but not to course completion. These bare statements of findings require expansion.

First, the commensurability finding refers primarily to a similarity between the factor solution obtained by Richardson, Morgan, and Woodley (1999) and that from a study by Harper and Kember (1986) but also notes similarities with work by Meyer and Parsons (1989). This work showed that factor solutions of the Approaches to Study Inventory (Ramsden & Entwistle, 1981) for both campus-based and distance students provided evidence of a meaning orientation (aligned with a deep approach) and a reproducing orientation (aligned with a surface approach), as well as two additional but less consistent factors. Second, the finding that distance students adopt approaches to study that are more aligned with the goals of higher education is likely to arise from differences between distance and on-campus students, especially with regard to age.

Richardson, Morgan, and Woodley (1999) note the tendency for distance and on-campus students to differ markedly in age distribution (older compared with younger). They cite Richardson (1994) as providing evidence to suggest that older students, studying either by distance or on-campus, are more likely to use a deep approach to study and less likely to use a surface approach to study than younger students are. The third finding relates to the impact of background variables on approaches to study. In particular, approaches to study can vary according to the academic discipline being studied, and contextual variables such as academic discipline, prior education, and even departmental contexts impact gender differences in study approach. Finally, the lack of a relationship between course completion and study approach highlighted the importance of contextual and demographic variables (such as workload and prior education) to student retention.

Since this major 1999 study, other studies exploring aspects of distance students' approaches to study have been undertaken. Murphy and Tyler (2005) moved beyond the classroom to consider how the learning approaches of part-time distance students studying management while employed influenced the transfer of learning to the workplace. The study's major finding was that "adoption of a deep approach to studies . . . was associated with high rates of transfer of learning to the students' workplaces" (Murphy & Tyler, 2005, p. 466). The authors argue that transfer is promoted because a deep approach is more likely to lead to generalisations and the formation of abstractions, both of which are important for transfer to occur.

In 2000, Carnwell investigated relationships among approaches to study, learning styles and strategies, and materials design and how these impacted students' need for distance learning support. The study was qualitative in nature, involving interviews with 20 female distance students undertaking nursing studies. Through analysis using grounded theory techniques, Carnwell identified three approaches to study, which she labelled systematic wading, speedy-focusing, and global dipping. These approaches were seen to be closely aligned with the more common terms for approaches (deep, strategic, and surface, respectively). Beyond this, Carnwell argues that the use of a particular approach to study "is mediated by the learning context and materials design" (p. 139) and that the resulting combination of factors determines the guidance and support required by students. Lyall and McNamara (2000) also report on the impact of issues such as physical space, time available to study, time of study, and family commitments on the study approaches of distance students and note how important it is to understand combinations of factors rather than to focus on a single aspect. These studies show how students orchestrate approaches to study and other factors as responses to their learning contexts.

Study Orchestrations

The term *study orchestration* was introduced by Meyer to represent the idea that the combination of study approaches at an individual level is a "context-specific response that is affected by the qualitative level of perception of certain elements of learning context" (Meyer et al., 1990a, p. 70). Thus, individuals may orchestrate their approaches to study differently in any particular learning context. In 1991, in a paper written to provide the conceptual and empirical basis for the concept, Meyer defined study orchestration as "the contextualised study approach adopted by individual students or by groups of students" (p. 297). The exploration of study orchestrations emphasises students' active participation in learning, describing the ways in which they marshal the resources available to them in response to their learning environment (Lindblom-Ylänne, 2003).

Early studies by Meyer, Parsons, and Dunne (1990a; 1990b) provided evidence that academic success was associated with theoretically interpretable study orchestrations, that is, study orchestrations in which there is consonance "between how the context and the content of learning are perceived and how learning takes place" (Cano, 2007, p. 135). However, most attention has been focused on the concept of dissonant orchestrations, described by Meyer (2000, p. 5) as occurring when "the expected theoretically coherent linkages between some or all of the more common sources of explanatory variation in contextualised learning behaviour *fail to appear* in a readily recognisable and interpretable form."

Dissonant study orchestrations can arise for several reasons (Long, 2003). Long argues that reasons for students to adopt such orchestrations include lack of method in study, poorly developed metacognitive skills, and failure to react appropriately to new educational contexts (p. 34). Support for this comes from Vermunt and Verloop (2000), who identified five ways in which dissonant orchestrations could be manifested, while recognising that these ways need not be independent of one another. They describe these ways as follows: (1) students may not differentiate between ways of processing materials or regulating their

learning—they may lack the metacognitive knowledge and awareness to do so; (2) there is a lack of fit between the strategies a student wants to use and the learning strategies fostered by the learning environment; (3) students may use processing or self-regulation strategies that are incompatible or conflicting; (4) students may use a "bare" version of a learning style, omitting essential elements; and (5) advanced or adult students in particular may aim to apply their knowledge directly but lack an appropriate learning strategy to support that aim (pp. 85–86).

Several of these manifestations of dissonance have been reported in other studies. Lindblom-Ylänne and Lonka (1999) studied a group of advanced medical students and found that those who showed dissonant study orchestrations explained that the learning environment forced them to study in a way not typical of them (p. 15). Cliff's (2000) work with educationally disadvantaged students showed that dissonant study orchestrations can arise from a lack of metacognitive awareness or from the inadequate or inappropriate use of self-regulation strategies. Difficulties in the use of metacognitive skills were also reported for students with clearly dissonant study orchestrations, both by Lindblom-Ylänne (2003) and by Cano (2007), in a study of high-school students. In addition to these factors, studies have shown that dissonant study orchestrations have been associated with low study success (Cano, 2007; Entwistle, Meyer, & Tait, 1991; Lindblom-Ylänne & Lonka, 1999).

Dissonance, then, points toward problematic links between learning environments and student approaches to study. Some students may lack the means or ability to craft the orchestrations of their study approaches to suit their learning environment. Long (2003) argues for the "alleviation of the condition of small but significant numbers of poorly attaining students" (p. 34) who can be identified with dissonant study orchestrations and says this is an important challenge to higher education. Identification of dissonance is achievable, and there is some evidence that it may be possible to design study support that helps students overcome that dissonance (Cano, 2007; Lindblom-Ylänne & Lonka, 1999; Wisker, Robinson, Trafford, Creighton, & Warnes, 2003).

The Present Study

The present study examines study orchestrations in a group of distance students. Given the evidence of links between study orchestrations and student achievement, it is important to determine the existence of and the balance between the study orchestrations manifested within a distance student population. Research involving on-campus students suggests the proportion of students with dissonant study orchestrations is relatively small (typically less than 10%), but recent research by Lindblom-Ylänne (2003) found that 23% of a group of law students had clearly dissonant study orchestrations. As noted earlier, no previous studies have attempted to identify dissonant study orchestrations within groups of distance students, and there is no indication of the extent to which they might occur in such groups. This study provides an initial response to both questions.

Method

Two hundred and sixty-three distance students from a dual-mode university were sent a questionnaire by post. The sample was drawn from the entire population of distance students enrolled during the first semester of an academic year (N = 1,609). The distance student population ranged from first-year students to those undertaking doctoral coursework, although over two-thirds were studying for a postgraduate qualification. Over 90% were studying part-time.

Participants were sent a version of the ASSIST questionnaire (Approaches and Study Skills Inventory for Students) (Entwistle et al., 2000), which had been modified for use with distance learners. The modifications for distance learners followed the example by Richardson, Morgan, and Woodley (1999), where terms or words relevant to on-campus education were replaced by the equivalents for distance learners. Sections of the ASSIST reported in this study are the 52-item study approaches questionnaire, the "Conceptions of learning" section, and the "Preferences for course and teaching" section, for each of which students were asked to rate items on a scale from 1 to 5. Initial analysis using the "Conceptions of learning" scales gave a factor solution in which the two scales formed a factor with communality values that exceeded 1. A forced three-factor solution was difficult to interpret. The two scales were excluded from further analysis, resulting in an interpretable factor solution.

In addition, participants were asked to provide a small set of data comprising a broad field of study (health sciences, humanities and social sciences, sciences, commerce), level of study (undergraduate or postgraduate), an indication of experience with distance learning (none, 1–3, or 4 or more papers passed previously), number of hours worked, and gender. All data analysis was undertaken using the statistical analysis software package SPSS 18.

The study received ethical approval from the Human Ethics Committee of the authors' institution. All participants were involved voluntarily and gave their informed consent following receipt of information about the study. They received feedback on responses to the ASSIST survey and with that feedback were advised to contact the researchers if they required additional information or advice.

Results and Discussion

From the sample of 263 students, 178 usable responses were received, giving a response rate of 67.7%. Within the group of participants, 77.4% were female and 22.6% male, reflecting the gender distribution of the population of distance students at the university from which the sample was drawn. In terms of fields of study, the distribution was as follows: Health Sciences, 43.2%; Humanities and Social Sciences, 44.9%; Sciences, 8.5%; and Commerce, 3.4%. This distribution slightly underweighted the percentage of Health Sciences students and slightly overweighted the percentage of Humanities students in comparison with the full distance student population. Percentages of postgraduate (78.5%) and undergraduate

(21.5%) were a good match to population percentages. With regard to level of experience with distance learning, 27.1% of students reported no previous distance learning experience, 35.6% reported some experience (1–3 papers completed), and the remainder (37.3%) were reasonably experienced distance learners having completed 4 or more distance papers previously. Of the participants, 83.5% were employed to some degree, with 55.4% reporting that they worked 37.5 hours or more per week, effectively being employed full-time.

Results are reported as follows: The first subsection reports the results of a factor analysis of the ASSIST data. The factor analysis was undertaken to ensure that ASSIST results from this group of students were commensurate with those obtained in previous studies. The second subsection reports on a hierarchical cluster analysis used to cluster participants into groups exhibiting similar study orchestrations. Cluster analysis classifies individuals according to patterns of scores—in this case, scores from the ASSIST instrument—and identifies subgroups with qualitatively different patterns of scores on the ASSIST subscales. A subsequent small subsection reports on relationships between the cluster groups and the small range of additional data gathered. Discussion of results is integral to this entire section.

Missing data appeared to be randomly scattered throughout the sample and were at a low level. Missing data in items of the ASSIST instrument (31 item scores missing) were replaced with sample means for each item. Two cases were identified as multivariate outliers with $p < .001$ and were deleted, giving a total of 176 cases used in subsequent analyses.

Factor Analysis

A preliminary principal components analysis using the thirteen subscales of the ASSIST questionnaire and the two "Preferences for courses and teaching" scales identified three principal components. This was confirmed by Catell's "scree test" (Tabachnik & Fidell, 2007). A factor analysis was then undertaken using maximum likelihood extraction and resulted in a three-factor solution. The extracted factor matrix was subject to oblimin rotation with delta set at zero. The three-factor solution explains 49.5% of the variance. Factor loadings from the pattern matrix and Cronbach's alpha for each of the variables used are shown in Table 1.

Table 1

Factor Loadings and Cronbach Alpha for ASSIST Subscales and Correlations between Factors

Scale	Factor			Alpha
	1	2	3	
Deep Approach				.85
Seeking Meaning	**.77**	.11	.01	.68
Relating Ideas	**.75**	-.15	-.16	.65
Use of Evidence	**.76**	-.08	.09	.45
Interest in Ideas	**.56**	.05	-.30	.68
Strategic Approach				.84
Organised Studying	-.02	**.77**	-.03	.49
Time Management	-.11	**.89**	-.08	.78
Alertness to Assessment Demands	.19	.31	.33	.67
Achievement Motivation	.06	**.74**	-.19	.63
Monitoring Effectiveness	**.48**	.32	.18	.50
Surface Apathetic Approach				.85
Lack of Purpose	-.05	-.25	**.59**	.70
Unrelated Memorising	-.16	-.06	**.64**	.60
Syllabus Boundness	-.18	-.14	**.49**	.71
Fear of Failure	.06	-.15	**.66**	.80
Preference for Courses and Teaching that				
Encourages Understanding	**.43**	-.02	-.35	.70
Transmits Information	-.03	.22	**.60**	.66
Correlations between factors	1	2	3	
Factor 1 (Deep)	1.00			
Factor 2 (Strategic)	.32	1.00		
Factor 3 (Surface Apathetic)	-.24	-.05	1.00	

Note: Factor loadings with an absolute value greater than .40 are shown in bold.

Factor loadings describe the contribution of each variable to the factors. Tabachnik and Fidell (2007) cite Comrey and Lee (1992) as suggesting that loading values of .45 can be described as fair, with loadings above .71 being described as excellent.

The pattern of factor loadings in Table 1 confirms that of earlier ASSIST analyses. Factor 1 represents the Deep Approach factor, Factor 2 the Strategic Approach, and Factor 3 the Surface Apathetic Approach. There was a positive correlation between the Deep Approach and Strategic Approach factors, but there were smaller negative correlations between Surface Apathetic and both Deep and Strategic factors. This pattern of correlations between these three factors has been found before (Entwistle et al., 2000; Richardson, 2005).

Two points of interest arise regarding the subscales in the Strategic Approach. First, the subscale "Alertness to assessment demands" does not have a high loading on any factor. The major loadings for this subscale were .31 on Factor 2 and .33 on Factor 3. Second, the subscale "Monitoring effectiveness" primarily loads onto Factor 1. Its loading for Factor 2 was .32. Both of the issues with the Strategic Approach subscales have been reported previously. The "Alertness to assessment demands" subscale was reported by Long (2003) as behaving anomalously. Byrne, Flood, and Willis (2004) note the subscale does not load on factors as expected and cite Diseth (2001) as reporting a similar finding. The cross-loading of the "Monitoring effectiveness" subscale is expected, having been reported by Entwistle et al. (2000) and described as "entirely understandable in conceptual terms" (p. 37).

The factor analysis confirms that it is appropriate to use the ASSIST instrument with this sample of distance students. Subscale loadings on the three factors are in accord with previous research, appropriate alpha coefficients are seen to exist, and factor correlations exhibit the same pattern noted in previous research.

Cluster Analysis

In this study, cluster analysis was used to group participants into a small number of sets. The sets were based on the similarity of the combination of each participant's scores on the five scales—three relating to study approach (deep, strategic, and surface-apathetic) and two relating to preferences for courses and teaching (encourages understanding and transmits information)—used in the factor analysis. Scores were standardised to ensure common variability among the different scales. A hierarchical cluster analysis was undertaken. There are many clustering algorithms available. The method chosen was the *furthest-neighbour* method (also known as *complete linkage clustering*), and the metric used was the *city-block* metric. The choice was based on the finding by Overall, Gibson, and Novy (1993) that this combination enabled the best recovery of population cluster characteristics. The number of clusters identified was based on differences in agglomeration coefficients. Differences between successive changes in the agglomeration schedule were small until four clusters were reduced to three, indicating that four clusters were present.

The cluster analysis provides the statistical argument that these clusters are different. A multivariate analysis of variance was considered as a means of confirming the statistical significance of mean differences among clusters but was not used. When checking the as-

sumptions for MANOVA use with this data, the test for homogeneity of covariance matrices (Box's test) was found to be significant and so a MANOVA was not undertaken. To determine differences between variables, multiple ANOVAs with adjusted significance levels were undertaken for those dependent variables (DVs) that met the assumption of homogeneity of variance. One dependent variable, the scale for "Course encourages understanding," was excluded from this analysis as Levene's test for this DV was significant. Table 2 shows the mean standardised scores for each of the clusters on the five scales and provides the results of this analysis. Differences between pairs of means in the same column that are not significant at $p < .01$ in a Games–Howell comparison are marked with the same superscript.

Table 2

Mean Standardised Scores (and Standard Deviations) of Students in Four Clusters

	Deep	Strategic	Surface-apathetic	Course encourages understanding	Course transmits information
Cluster 1 ($n = 38$)	-0.43[a] (0.66)	-0.52[a] (0.63)	-0.22[a] (0.68)	-0.10 (0.50)	-0.45[a] (0.75)
Cluster 2 ($n = 47$)	0.43[b] (0.70)	0.56[b] (1.10)	0.30[a,b] (0.93)	0.35 (0.74)	0.73[b] (0.48)
Cluster 3 ($n = 45$)	-0.85[a] (0.83)	-0.39[a] (0.87)	0.76[b] (0.91)	-1.17 (0.84)	0.56[b] (0.67)
Cluster 4 ($n = 46$)	0.80[b] (0.58)	0.22[b] (0.94)	-0.87 (0.60)	0.85 (0.41)	-0.84[a] (0.84)

Differences between pairs of means in the same column with the same superscript are not significant at p < .01 in a Games–Howell comparison. Other pairs in the same column are significantly different.

The four clusters can be generally interpreted as follows: Cluster 4 is strongly associated with students adopting a deep approach in combination with very low scores on the surface-apathetic approach. These students prefer courses that encourage understanding in strong contrast with their much weaker level of preference for courses that transmit information. In contrast, students in Cluster 3 are more likely to adopt a surface-apathetic approach with only weak scores for the strategic approach and much weaker scores for the deep approach. Cluster 3 students have a strong preference for courses that transmit information. Cluster 2 scores suggest the adoption of a strategic approach. Students in this cluster scored moderately highly across all scales but with the highest score in the strategic approach scale. They are differentiated from Cluster 4 by the surface-apathetic scale and a stronger preference for courses that transmit information. The profile of Cluster 1 students is aberrant with mean scores in all scales being below the overall sample average. The lack of discernible theoretical fit suggests the existence of a group of students for whom dissonant study orchestrations are evident.

Cluster 1, the cluster of students with dissonant study orchestrations, represents just over one-fifth of the sample. The extent of this cluster is consistent with the findings in a study by Lindblom-Ylänne (2003), in which nearly a quarter of the participants were found to have dissonant study orchestrations.

Analyses were undertaken based on the additional data: level of study, broad field of study, distance learning experience, level of employment (taken as two levels—35 hours or more of paid work and less than 35 hours of work or not employed), and gender. The only significant variation between clusters was found for level of study $\chi^2(3) = 14.49$, $p < .01$ where postgraduate students were more likely than undergraduate students to be represented in Cluster 4. Age data were not gathered for the sample, so the possibility that this significant finding is an artefact of age differences between postgraduate and undergraduate students (Richardson, Morgan, & Woodley, 1999) cannot be ruled out, even though the age profile for the distance student population at the target institution is strongly biased toward older students.

These findings provide evidence for the existence of learners with dissonant study orchestrations within the population of distance students. The presence of such a group deserves recognition because of the previously cited link between dissonant study orchestrations and low study success. The lack of apparent relationship between study orchestration and the additional data gathered supports Long's argument (2003, p. 33) that "dissonance operates in the micro-environment of the individual learner rather than arising simply from collective student disengagement from inappropriately operating curricula." In other words, change in a curriculum or teaching approach alone, often cited as a means to move students toward a study orchestration affording greater likelihood of study success (Ballantine et al., 2008; Maguire, Evans, & Dyas, 2001; Reid et al., 2005; Walker et al., 2009), may be necessary but not sufficient to do so.

The development of metacognitive and self-regulatory skills is an important aspect of the micro-environment of the individual learner. Entwistle and McCune (2004) have reported that recent work on approaches to studying has "emphasized self-conscious reflection on studying, drawing on the ideas of metacognition and self-regulation" (p. 333). Cliff (2000) and Lindblom-Ylänne (2003) indicate the potential role of metacognitive skills for students identified as having dissonant study orchestrations. Anderson (2007) also identified the importance of metacognitive strategy use in distance education but noted the relative lack of studies in this area and suggested that an increasing awareness of the metacognitive strength of students was essential. Since then there has been more work with a focus on the identification and promotion of metacognitive and self-regulatory skills in distance and on-line learning environments (e.g., Downing, Cheung, Wong, & Shin, 2007; Murphy, 2008; Reingold, Rimor, & Kalay, 2008; Topcu & Ubuz, 2008). Such skill development includes helping learners to focus attention, to monitor their learning through elaboration, and to review attainment of learning goals. However, as with curriculum change, metacognitive skill development may not be sufficient to prompt change from a dissonant study orchestration if the teaching approach or the curriculum is not also designed to support such a change.

Limitations in this study include its relatively small sample and the high proportion of post-graduate students in the population of the institution from which the sample was drawn. Further research in different contexts is needed to confirm the existence of groups of students with dissonant study orchestrations in distance education settings. Such research would also confirm the size of such groups as a proportion of distance student populations. Given the research findings in on-campus settings, it is likely that such confirmation will occur. Educators could then focus, with renewed vigour, on the reasonably well-understood but perhaps not well-implemented work of enhancing student metacognitive awareness and skills and on ensuring that curriculum design and teaching approaches support effective and successful approaches to study in distance education.

Conclusion

This study has provided evidence for the existence of a group of students with dissonant study orchestrations within a population of distance students and has shown that that group of students comprises a reasonable proportion of the overall population. Previous work has shown that students with dissonant study orchestrations are likely to be poorly attaining students. Such students can be identified, and the evidence to date suggests that incorporating ways to develop metacognitive and self-regulatory skills and their use within distance courses is possible and would be valuable. Metacognitive development should not stand alone. In conjunction with appropriate curriculum and teaching approaches, meta-cognitive skill development may work to engender study orchestrations consonant with successful learning in distance education contexts.

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Open-Access Textbooks and Financial Sustainability: A Case Study on Flat World Knowledge
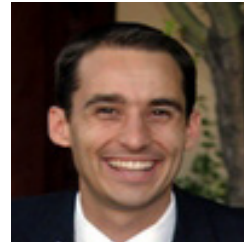
John Hilton III and **David Wiley**
Brigham Young University, USA

Abstract

Many college students and their families are concerned about the high costs of textbooks. A company called Flat World Knowledge both gives away and sells open-source textbooks in a way it believes to be financially sustainable. This article reports on the financial sustainability of the Flat World Knowledge open-source textbook model after one year of operation.

Keywords: Open educational resources; open textbooks; electronic textbooks; Flat World Knowledge; open access; sustainability

Introduction

Money is tight for college students in any economy, but during difficult economic times students work harder than ever to reduce expenses. One of the key expenses students face is the price of textbooks. The National Association of College Stores (2009) estimates that the average student in the United States spends $702 on textbooks per year. In total, students in the United States spend $5.5 billion each year on required textbooks—and this includes only purchases made at on-campus bookstores (National Association of College Stores, 2009).

Whether or not e-books can solve the problem of high textbook costs is still open to debate (Butler, 2009; Albanese, 2009). Many companies are rushing forward to distribute electronic textbooks that are substantially cheaper than printed copies. There has been a consistent hype stating that e-book sales will eclipse those of print books (Nelson, 2008), and this happened for the first time on Amazon.com on Christmas Day of 2009 (Allen, 2009). While the rising prominence of e-books in general (e.g., Amazon's Kindle, Apple iBooks,

and the Google Bookstore) may indicate a growing opportunity for electronic textbooks, e-books are hampered by some disadvantages. For example, digital rights management technologies prevent some e-books from being downloaded or used on multiple computers, and it is difficult or impossible to resell an e-book (Foster, 2005).

From a student's perspective, the most attractive textbook would likely be a free one. Hilton and Wiley (2010) discuss a variety of organizations that make free digital textbooks available to college students. In some cases, government initiatives are sponsoring projects to make digital textbooks available to students for free or at a low cost. For example, the U.S. state of Washington has an initiative that would cap the cost of classroom materials at $30.00 per class (Overland, 2011). The United States Department of Labor has also announced grants that could be used to fund open-textbook projects (Gonzalez, 2011).

In other cases, for-profit and non-profit organizations are working to make free digital textbooks available. Because these organizations provide their textbooks for free, their long-term financial sustainability is an issue. Hilton and Wiley (2010) provide background on some of these organizations. Multiple authors have presented information about the sustainability of open educational resources in general (Downes, 2007; Koohang & Harman, 2007; Wiley, 2006). The present study focuses on the financial sustainability of one for-profit company that produces free and openly licensed textbooks: Flat World Knowledge.

Flat World Knowledge: Free and Open Textbooks

Established in 2007, Flat World Knowledge (FWK) is trying to build a sustainable business based on open textbooks (i.e., textbooks licensed with a Creative Commons license). According to the FWK model, an expert author writes a textbook and receives editorial and design support from FWK. The finished book is made available online for free access under a Creative Commons Attribution, Noncommercial, Share Alike license (BY-NC-SA, Creative Commons, n.d.). Alternate formats of the book (such as printed and audio versions) as well as supplemental materials are created and made available for purchase. Hilton and Wiley (2010) provide additional detail about the FWK model and outline a variety of ways that FWK believes its pro-openness stance is educationally beneficial, including allowing professors to remix textbook content more easily (and legally) and offering students a free digital option for their required textbooks.

Hilton and Wiley (2010) examined the results of FWK's alpha and beta tests. During alpha testing, a majority of surveyed faculty members and students expressed interest in the FWK open approach. For the beta test, FWK made six of their textbooks available to students in 27 different classes. In total, approximately 750 students enrolled in these classes. Each of these students had access to the free online version of the textbook and no purchase was required. Of these 750 students, 442 (59%) placed at least one order with FWK, with the average student spending $28.20. Approximately 40% of students chose to purchase a print copy of the textbook even though the online version was available for free (printed books were sold from the same site where the free version was available).

Examining Sustainability—One Year Later

Flat World Knowledge left beta status and began allowing public adoptions of their textbooks at the start of the 2009–2010 school year. What follows is data gathered by the authors from FWK's internal reporting and e-commerce systems. 57,690 students in 1,153 different classes used FWK textbooks during the first year the company was open to the public (10 textbooks were available at the time of this study). These classes occurred in three semesters: fall 2009, spring 2010, and summer 2010. Table 1 shows the number of classes participating and the number of students enrolled for each of these semesters.

Table 1

Number of Classes and Students using FWK Materials by Semester

	Fall 2009	Spring 2010	Summer 2010	Total
Number of classes	417	486	250	1,153
Number of students	25,000	23,028	9,662	57,690

Students in these classes could access their textbook in a variety of ways. They could (1) buy a print copy of the book from their local university bookstore or from an online site such as Amazon.com; (2) buy a complete print, PDF, or audio version of the text directly from FWK; (3) buy specific chapters, but not the whole book, from FWK; or (4) access the textbook online for free.

Revenue

A total of 16,461 print textbooks were purchased over the three semesters, generating $479,259 of revenue. Of these print copies, 10,970 (67%) were purchased through a campus bookstore. In total, approximately 29% of students purchased a print copy of the textbook. In addition to these print textbook purchases, many students purchased digital products directly from FWK. Table 2 shows the number of additional products purchased as well as the revenue associated with these products.

Table 2

Digital Products Sold by FWK in the 2009–2010 School Year

Product	Units sold	Total revenue (USD)
Audio book/chapter	11,320	12,630
Audio glossary	161	240
Audio study guide	14,036	13,682
EPUB book	6	150
Flash cards	14,857	14,912
Flyx products (online assessments)	418	16,689
Online practice quiz	14,014	13,608
Print-yourself chapters	40,690	56,671
Student print companion	67	84
Total	**181,563**	**128,666**

65.7% of students taking a class that used FWK materials registered on the FWK website. Approximately one in four of the students who registered on the site made a purchase there. The average buyer made 1.3 purchases, with the average purchase totaling $30.89. Because many of these purchases were collections of resources bundled together the number of total unit purchases (181,563) is much higher than the average number of purchases.

Costs

FWK published its first 10 textbooks at an average cost of approximately $150,000 per book. Since these first 10 books were published, the average cost of producing a book has decreased to $120,000 per book due to increases in operational efficiencies. Broken down, those new costs are

authoring (writing) fees (average $15,000, which is the upfront fee paid to authors and does not include royalties paid on book sales);

• peer reviewing (average $20,000);

• design, illustrations, art (average $15,000);

- production (XML, proofing, QA, etc.) (average $25,000);

- alternate versions (audio, handheld, etc.) (average $15,000);

- instructor ancillaries (average $15,000); and

- student ancillaries (average $15,000).

In addition to the production costs of creating the textbooks, there are additional costs involved in getting faculty members to adopt them. For the academic year 2009–2010, FWK experimented with new sales and marketing programs to attract faculty to adopt their textbooks. The financial results of those programs did not appear to be sustainable. The cost to acquire one faculty member under this model was over $2,500, and on average that faculty member's course delivered about $225 in gross profit. Clearly, those marketing strategies needed further analysis.

For the academic year 2010–2011, Flat World Knowledge made greater use of their internal customer relationship management system, a new lead-generation technique, aggressive and creative public relations, and a Faculty Advocates program. This Faculty Advocates program includes faculty advisors organizing educational workshops on their campuses about the benefits of open textbooks. The results were significantly better. FWK reported that the average cost of faculty acquisition dropped to under $900. And with improvements to the student commerce side of the business, gross profit per adoption climbed above $300. In essence, it takes a faculty member using the textbook for three semesters in order to pay for the costs of acquiring that faculty member. The company hopes for full payback of a faculty acquisition in a single semester by the academic year 2011–2012.

Of the approximately 500 faculty adopters that Flat World Knowledge attracted in the summer and fall of 2009, only 9% were referred to the company via a colleague. Of the almost 1,200 faculty adopters for the summer and fall of 2010, 27% were referred to Flat World Knowledge by a colleague. This may indicate that faculty are having a good first experience with the company's products and business model and are proactively sharing their experiences with their colleagues. If so, it bodes well for continued efficiency in the cost of acquiring faculty customers and the company's long-term sustainability.

Discussion

During the beta period, 59% of students made a purchase through Flat World Knowledge with the average purchase totaling $28.20. Bookstores and other outlets did not sell FWK products during the beta period. During the first year of public operation, 16% of students made purchases directly from FWK with the average purchase totaling $30.89. When bookstore purchases are taken into account, 34% of students purchased a FWK product. Although 39% of students purchased a printed book during the beta period, only 29% purchased a printed book during the first public year. This decrease in the overall percentage of

students making a purchase may be problematic for FWK if the trend continues downward as the number of adoptions increases.

For the 2009–2010 school year, the average textbook was responsible for approximately $48,000 in revenue. If the same number of textbooks were sold during each year, it would take approximately three years to recoup the costs of producing these initial books ($150,000, as stated previously). Of course, these numbers do not include administrative, overhead, and other costs not related to the production of books.

We should note, however, that enrollment grew from 790 students in the private beta period to 57,690 students in the first year of normal operation. Should enrollment continue to increase, the amount of time required to recover the costs of book production and to become profitable will decrease.

Conclusion

Many people in higher education have been looking at the possibility of using free and open textbooks (Baker, 2008; Baker, Thierstein, Fletcher, Kaur, & Emmons, 2009). Digital media drives down the marginal cost of additional copies of books, making it possible for many to access the resources at a potentially low cost. Currently, electronic texts represent less than 10% of existing textbook sales (Butler, 2009). Will this figure change soon? Nicholas and Lewis (2009) point out that although "every year is predicted to be the year that electronic textbooks take off," they haven't yet done so (p. 4). However, in a small-scale study of middle-class students, they did find that "if an e-textbook were just $25 less than a print version, 75% of the students would select it" (p. 7). They further hypothesized that "at a school with a more diverse student population, such as a community college, cost is likely to be even more of a determining factor" (p. 7). Thus, if textbooks can be given away online for free, e-textbook adoption could really take off.

Although *free* may sound good to consumers, it can be very difficult to make money if you are giving away your product (Anderson, 2009). Michael Jensen of the National Academies Press recently reported that his organization (which makes all of its materials available for free) is facing declining sales (Hadro, 2010). Only a few years earlier, Jensen reported that giving digital books away had increased sales (Jensen, 2007). Thus, when dealing with free digital content, what worked today may not work tomorrow. As FWK moves forward with its specific model, it may encounter challenges if an increasing number of students become comfortable with the free version of its textbooks and choose not to purchase printed books or ancillary materials.

However, if FWK (or other organizations) can find sustainability while distributing free digital textbooks, the textbook market could be dramatically altered. Because it is so hard to compete with "free," textbook prices would likely come down and eventually become only a small part of the cost of higher education. The potential for the disruption of the textbook publishing industry, as well as the potential savings to students, is enormous if one or more

organizations can create a sustainable business model. Whether this can be done remains to be seen.

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Athabasca University

Liminality and Disinhibition in Online Language Learning
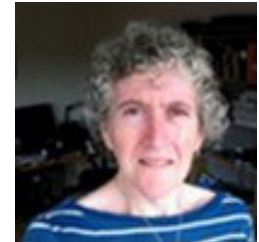
Una Cunningham
Stockholm University, Sweden

Abstract

The aim of this paper is to bring theoretical concepts from other areas of scholarly research to bear on synchronous online education in a cross-disciplinary effort to shed light on what is going on by introducing systems of thought from other areas. The liminality and associated communitas which are found in synchronous online learning environments are examined for their possible consequences for learning in general and language learning in particular. Like computer-mediated communication, liminality has been associated with disinhibitory effects. Lack of excessive inhibition has been shown to have positive effects on second language production. The position of the online learner as "neither here nor there" or perhaps simultaneously both here and there is investigated and discussed.

Keywords: Distance universities; higher education; e-learning; CMC; liminality; disinhibition; language learning; online learning; computer-mediated communication

Imagine an octagonal room with a door in each of its eight walls. The room contains a round table with eight chairs at it. All eight doors are open, and you can see where they lead. Through the first door you see a Swedish pine forest, covered in a deep blanket of snow; the next door leads to a bustling, noisy market scene in a village in the foothills of the Hindu Kush; the third door opens onto a very hot Internet café at the edge of a windswept desert with pyramids on the horizon; the fourth door opens onto the hooting, seething traffic of central Hanoi; the fifth to a bedroom bathed in the morning sun, high up in a skyscraper in Buenos Aires; the sixth to a mountain monastery in Catalonia; the seventh to an apartment in Hong Kong; and the eighth leads onto a beautiful beach on Australia's west coast with the surf rolling in under the moonlight. A few minutes before the appointed hour, people start coming into the room and sitting down. In Buenos Aires it is 9 a.m. and Ana has just

had breakfast. It is 1 p.m. at the monastery in Catalonia, but it will not be lunchtime for a couple of hours for Brother Xavier. In Egypt it is 2 p.m. and Hoda is looking a little warm; in northern Pakistan it is 5 p.m.—Hussain has just finished work for the day and steps in from the market square where everything has been packed up for the night. In Hanoi it is 7 p.m. and dark as Thu slips into her seat; in Hong Kong it is 8 p.m. and Christine has just settled her son in front of the TV so she can join the group; and in Australia it is 10 p.m. and the beach is dark and deserted, though Ben is still wearing his shorts and flip-flops. The seven students know each other already and start chitchatting about the weather (always an interesting topic, as they live in such different conditions) and about the reading they had to do to prepare for the class. Since the last time they met (a week ago), they have posted their reading reflections on the forum discussion page on Fronter, their university's learning platform, and they have been busy commenting on each other's writing. When Una, the teacher, steps into the room, it is 1 p.m. in Sweden and she has just come back to her office after lunch. The students are already deep in discussion about a point raised by Thu with which Ben is quite unable to agree. The seven students are eager to ask questions that have arisen in their discussions since the last class and to have the teacher give her thoughts on the dispute.

This description is neither from a computer-based role-playing game nor from the Arabian Nights or any other tale of fantasy. The learning situation described here is not unusual if we consider that the seminar room does not have a physical reality. Students anywhere can use desktop technology such as Adobe Connect to come together in real time for synchronous seminars, without needing to make a physical journey to the university and its classrooms. The interface between their own physical space and the virtual space of the seminar room is the networked computer rather than a door, but the feeling is very much the same. The students are able to hear a certain amount of background noise from each location when that participant activates his or her microphone. The sound of waves on the Australian beach will compete with the traffic noise in Hanoi for students' attention.

The advantages of this virtual communication are legion—economy, safety, comfort, convenience, and, not least, minimal use of resources. There are disadvantages, of course, many of which have been described at length in this journal, but for many students this kind of online learning is possible in situations where university study would not otherwise be feasible. The globalization of education has led to the existence of the kind of classroom demography described here. Particularly at the postgraduate level, students trawl the Net in search of courses that meet their needs and that they can credit to the degree program they are taking at their home university, which may or may not be closer to home. Swedish universities have been particularly attractive in this global market as they are only now (autumn, 2011) introducing application and tuition fees, and then only for students from outside the EU.

The meeting of students from many different locations at a single point in absolute time is fairly new. Until recently, the technology involved in this kind of meeting was cumbersome and prohibitively expensive. There are a number of qualitative differences between synchronous and asynchronous meetings and also between text-based and multimodal meet-

ing environments. This kind of meeting does bring with it some consequences, however, which may—and probably do—have an effect on learning in general and on language learning in particular. The aim of this paper is to bring theoretical concepts from other areas of scholarly research to bear on synchronous online education in a cross-disciplinary effort to shed light on what is happening. In turn, I will consider liminality, disinhibition, social presence, and another effect I call quantum education.

Liminality

The concept of liminality, from the Latin *limens* (threshold), was first introduced in anthropology by van Gennep (1960) and was later refined by Turner (1967, 1969). Turner referred to liminality in the specific context of rites of passage in the literal sense. In a much quoted and misquoted sentence, Turner (1969) writes, "Liminal entities are neither here nor there; they are betwixt and between the positions assigned and arrayed by law, custom, convention and ceremonial" (p. 95). Turner further describes the "communitas" experienced in the liminal period as "a community or even communion of equal individuals who submit together to the general authority of the ritual elders" (p.96).

The applicability of this conceptual framework to our octagonal room with its round, non-hierarchical table is striking, and the "ritual elder" here is of course the seminar leader, or perhaps the university itself. The participants in the seminar are removed from their normal positions in their physical reality but they will return there—perhaps changed in some way—after the seminar. The communitas of the seminar room is fundamental to modern sociocommunicative theories of learning, and the non-hierarchical meeting of equals is integral to the kind of supportive and permissive learning environment to which modern university seminars aspire.

Since Turner's work, the concept of liminality has been extended and stretched almost out of recognition to cover anything from a process from one state to another to the feeling of being in some sense marginal, as in the homeless, who are referred to as "separated from one social category and…suspended in an intermediate status before crossing over into another category" (Wingate-Lewinson, Hopps, & Reeves, 2010), or the mobility experienced by Brazilian truck drivers (Lippman et al., 2007).

The octagonal seminar room is a liminal space by all these definitions. Participants are in a sense removed from their mundane day-to-day lives with their associated packages of rights, duties, and norms, yet at the same time they remain in the physical space of their day-to-day lives. The norms that apply here in the virtual seminar room are new—set by the environment and by the requirements of the Swedish university—yet, at the same time, the participants are subject to the norms imposed by their physical environment and their day-to-day lives that may in fact be continuing around them. The participants are detached and thus free in the sense that their minds and senses are occupied by the seminar. They are set up for the transitional experience of learning and will return from the experience changed. Each of them is part of the communal seminar experience. The actions of each affect the whole.

Liminal Disinhibition

The anthropologist, Turner (1969, p. 104), describes a liminal space characterized by sexual continence that was created in the Ndembu installation rites. Unlike in this space, other kinds of liminal contexts can have different effects. The matter of reduced responsibility may account to some extent for the feeling of not having to conform to the constraints of everyday life. Lippman et al. (2007) associate the liminal environment of truck drivers who regularly cross borders with reduced sexual responsibility "through (the) perception of greater autonomy and distance from traditional norms" (p. 2465). They measured the extent to which truck drivers in this particular context agreed with statements such as, "I feel like I am a different person when I am on the road," "When I am on the road I can do things that I don't do at home," and "When I am on the road I don't have anyone telling me what to do." They relate this change in attitude to similar documented effects found in the behaviour of young tourists, who are temporarily removed from their day-to-day lives (Apostolopoulos, Sonmez, & Yu, 2002; Eiser & Ford, 1995; Ford & Eiser, 1996). While they were backpacking, the young tourists studied by these scholars also felt freed from the norms by which they usually abide. The idea of a holiday romance or casual sex while away from home can thus be explained by the removal from the familiar environment and by the assurance that this is a temporary state from which the travellers will eventually return, back to norms and normality. Applied to the non-physical experience of the online seminar, we might expect the feeling of reduced responsibility to be reflected in a reduced wariness and perhaps a greater willingness to take risks as a student. Risk-taking is a necessary part of successful language learning where student activity is required for learning to take place (Swain, 1985; Naiman, Frölich, Stern, & Todesco, 1995).

Net-Based Communication and Disinhibition

Disinhibitory effects have previously been noted in computer-mediated communication (CMC) (e.g., Suler, 2004; Joinson, 2003). Joinson (1998) defined disinhibition on the Internet as "any behaviour that is characterized by an apparent reduction in concerns for self-presentation and judgement of others" (p. 44). This disinhibition has in some contexts led to aggressive behaviour, such as verbal aggression (Dyer, Green, Pitts, & Milward, 1995). Angeli and Brahnam (2008) found that people interacting with computers emulating conversational partners (chatterbots) were in fact often very rude to them.

Thurlow, Lengel, and Tomic (2004) reject the notion that the fact that CMC is less information-rich than face-to-face communication is enough to evoke "an endless stream of rude, insulting, aggressive and inflammatory remarks," (p. 70) since other limited forms of communication, such as letter-writing, do not. This has been associated with the perceived anonymity of computer-mediated communication at a time when such communication was primarily text-based (Joinson, 1998). Thurlow et al. (2004) point out that participants report a perception of freedom from constraints and responsibility in CMC, such that people can feel less self-conscious about their appearance and more inclined to disclose things about themselves. The freedom from responsibility has been seen in connection with a response to reduced social cues. The reduced social cues (RSC) model was proposed by Sproull and Keisler (1986) and by Keisler and Sproull (1992) to explain the negative impact of computer

mediation on group processes. The RSC model referred specifically to text-based interaction, and the main idea was that the reduction in social cues leads to more effortful conversation, which is also more task-focussed. This then leads to more self-absorption and a lack of inhibition, which makes CMC "undermine social norms and influences" (Thurlow et al., 2004, p. 61). Thurlow et al. (2004) relate this to the social psychological concept of de-individuation, where the group activity "becomes more important and the individual's self- awareness diminishes" and the group "takes on a mind of its own" (p. 63). This might in turn tie back into what Turner (1969) called *communitas*.

Joinson (1998) points out that disinhibition cannot be assumed to occur in all online contexts. In a study of community in (text-based asynchronous) online learning, Conrad (2002a) claims "there is no anonymity in online learning" (p. 8). She writes that the online learners' commitment to their program "created in them an increased sense of inhibition" (p. 9). It is unclear whether she is comparing the online classroom to the face-to-face classroom or to other anonymous and casual online activities. In the former case, I would argue that the reduced self-revelation afforded by the virtual environment, along with the possibility of physically remaining in a familiar and secure environment, are anyhow less inhibiting than the physical classroom environment. Multimodality of the environment allows participation through text and no need to participate in stressful, face-threatening competition for the floor (Cunningham, Beers Fägersten, & Holmsten, 2010).

There are also studies that reflect on the positive effects of disinhibition. A study by Roberts, Smith, and Pollock (2000) found that shy people found it easier to open up online and even offline after the online experience. Rice and Markey (2009) and High and Caplan (2009) found that anonymous text-chat conversations with strangers were perceived as less stressful than similar face-to-face conversations. Shepherd and Edelmann (2005) found that the Internet was a useful channel for social engagement for students who experience social anxiety. For some students, technology itself is stressful, though this is likely to become less of a problem as the number of students who are unfamiliar with computers and the Internet decreases. Conrad (2002b) tells of students who experience anxiety and a great need for information before embarking on a text-based Net-based course without synchronous meetings.

My own experience of multimodal synchronous seminar tools such as Adobe Connect is that students who are not obliged to use a webcam will generally prefer not to. Students have expressed appreciation of the option to be present in voice but not video. As one student put it, "I can take part in my pyjamas and no one is any the wiser." I have enabled a student with Asperger's syndrome to take part in my course by assuring him that he would not have to use a webcam. He felt that as long as he could not be seen, he was not as exposed to his classmates. He would not have been able to attend a campus course. Even if the Net-based students are not anonymous in the sense that they appear in the virtual seminar room using their own names, they do not know each other, and while many students do get to know their online classmates and meet up online or in real life outside class, most do not. Conrad (2002a) reports findings indicating that learners who have been part of a text-based online learning community for a long time (as might be the case with degree programs that con-

tinue for several years) may feel "a sense of wariness about what they committed in writing to course websites." (p. 12). The enduring nature of online written communication can here be contrasted with the assumed transience of the spoken word in the synchronous seminars afforded by contemporary Net-based technology.

Joinson (2003, pp. 182–183) comments that increased ease of self-disclosure may be associated with perceived anonymity and an associated reduced accountability but suggests that the introspection involved in writing might increase self-awareness, leading to changes in how the individual sees himself or herself. Joinson (2001) experimented with the effect of adding a video channel to a text chat and found that visually anonymous participants disclosed significantly more information about themselves than non-visually anonymous participants and also that higher levels of private self-awareness (seeing oneself in a mirror) in combination with high public self-awareness (i.e., a lack of anonymity including a video link to the interlocutor) decreased participants' willingness to self-disclose. Shepherd and Edelmann (2005) found a correlation between social phobia and social anxiety and a preference for Net-based communication for social purposes, while Rice and Markey (2009) discovered in an experiment that a group of introverted women found text-based, anonymous, Net-based communication less stressful than face-to face communication. It is not clear how far the "reduced media richness" (Hudson & Bruckman, 2002) of the online environment, together with the possibility of further limiting the modes used (by non-use of a webcam), will be enough to trigger a disinhibitory effect.

In face-to-face EFL teaching, relatively few students dare to spontaneously express their thoughts in front of the class, at least partly due to their reluctance to speak English in front of their teacher and peers. In Net-based seminars, there is, as Conrad (2002a) put it, "no distance: you cannot run and you cannot hide" (p. 11). It is very clear if a student remains silent throughout an online seminar as the nature of the technology leads to teachers regularly asking all students for input of some kind.

Language Learning

Current thinking about how languages are learned includes both Krashen's (1985) input hypothesis, which posits that learners need input that is just a little more complex than they understand but from which meaning can be inferred, and Swain's (1985) work on the role of interaction, which suggests that learners need the opportunity to produce comprehensible output. Sociocultural factors and the social perspective of learners are widely believed to be an integral part of second-language acquisition (Swain & Deters, 2007). It is well known that affective factors such as inhibition are a disadvantage to the language learner. Early studies replicating the informal experiments of generations of language students found that inhibition-lowering drugs such as alcohol (Guiora, Beit-Hallahmi, Brannon, Dull, & Scovel, 1972) and Valium (Guiora, Acton, Erard, & Strickland, 1980) improved oral production skills in a foreign language. Naiman et al. (1995) found that "an indication by the student of his general classroom personality, including fear of being laughed at, or being embarrassed when speaking, or not putting up his hand until he was certain he knew the response, etc." (p. 148) was a good predictor of language learning success. Individual factors that charac-

terize good language learners include being willing to take risks. Rubin (1975) includes the following in his list of strategies for aspiring "good language learners": "The good language learner is often not inhibited. He is willing to appear foolish if reasonable communication results. He is willing to make mistakes in order to learn and to communicate." (p. 47).

Hudson and Bruckman (2002) relate Guiora's claim from 1972 that giving up control is necessary to learning a new language to the virtual environment and to disinhibition research in Net-based environments, such as Joinson's work (1998, 2003). They found that students who were reluctant to speak the foreign language in classroom situations were active in real-time text chats with their classmates in the foreign language. Hudson and Bruckman account for this as a reflection of the reduced media richness of the text-based environment and the fact that there is a difference in immediacy caused by the delay between message composition and message receipt. They have looked at several online language-learning studies that point to benefits (e.g., Beauvois, 1997; Beauvois & Flege, 1996). They warn that all of these have been set in text-based environments, and they fear that the introduction of richer online environments might impede the disinhibition advantages associated with the text-based situation.

Social Presence

The experience of liminality in the online seminar will be proportional to the perceived reality of the seminar experience, which in turn will be associated with the degree of perceived presence in the seminar. Lombard and Ditton (1997) discuss both the use of a medium to transport the user to a place and the physical or psychological immersion of the user in the space represented through the medium. In the Adobe Connect seminar room, there is a room metaphor in operation, which is designed to set students into an appropriate mode on entering the seminar space. Although there is no graphic support for this, students are encouraged to view the Connect portal page as a corridor with doors to classrooms, such that they are only allowed to open the door of their own seminar at the appropriate time to avoid disturbing other classes. Presence in this context is defined as the subjective experience of being in one place or environment, even when one is physically situated in another (Witmer & Singer, 1998). Zhao (2003) defines one kind of co-presence as being together with another person in a technology-mediated environment, along with the sense of togetherness perceived in that context, and claims that the simultaneous presence of the participants in the seminar is crucial for the sociocommunicative learning that is expected to take place. The communitas of all being in the same boat (although actually in wildly different times and places) is an integral part of the synchronous seminar experience.

While Hudson and Bruckman (2002) warn online educators not to attempt to recreate the classroom experience, maybe this is just what they need to do to enhance the positive effects of liminality. Taking this position to its extreme, educators operating within an enriched virtual environment, such as Second Life, report that their students are immersed and interactive, but these virtual worlds have proved to be a disappointment to many early adopters (Stieglitz, Lattemann, & Fohr, 2010) and the potential for exciting learning environments has not been realized. The virtual learning environment offered by desktop

video-conferencing systems such as Adobe Connect is in one sense not as realistic as a virtual world, but it does have the advantage of focussing the attention of the participants on what they are doing, rather than on the transportation of their avatars. The use of a headset reduces the audio input from the real world surrounding the student and makes the sounds that surround the other participants who have active microphones at least as salient as the real-world sounds in the student's own physical environment. As well as listening carefully to the audio channel, attention must be paid to other modes, such as the video images of the other participants, the whiteboard, and the text chat, in order to cope with and compensate for the sometimes distorted signal and the unfamiliar accents of the other participants (Cunningham et al., 2010). The online seminar experience in this kind of setting is demanding for teacher and students alike.

Most of the existing research dealing with social presence in online learning (e.g., Garrison, Anderson, & Archer, 2001; Swan & Shih, 2005; Shea, Li, & Pickett, 2006) is old already and based in asynchronous, text-based learning contexts. The kind of social presence available to students in these settings is different from that in contemporary synchronous multimodal seminar environments. The latter simulate face-to-face teaching much more closely, but I argue that the differences that do exist are such that the students' perception of self-disclosure is less than in the face-to-face environment.

Mennecke, Triplett, Hassall, and Conde (2010) discuss embodied social presence and claim that the use of an avatar is important in the suspension of disbelief needed for the creation of the feeling of presence in computer-mediated environments. On the same note, Senem (2009) discovered that students found it difficult to see their classmates as real at the beginning of the course and that they actively looked for pictures of their classmates to have an idea of what they looked like. Both these findings suggest that visual information about fellow students and teachers may be important for constructing a perception of social presence. In the setting described here, the students can see each other and the teacher if they have activated their webcams.

Quantum Education?

Hudson and Bruckman (2002) expressed a fear that a richer multimodal environment might not produce the disinhibitory effects seen in text-based interaction, yet it may well be that the liminality of the online seminar room can generate the same kind of effects. The disinhibition associated with liminality could be a very positive effect if it were to be applied to language learning. Of course, in the case of the octagonal room presented at the beginning of this paper, the participants are not only "betwixt and between, neither here nor there" as Turner put it, but rather *both* here and there. They are in their physical environment, feeling the heat or cold and humidity or dry air, hearing the sounds around them, and they are also, simultaneously, in the virtual environment, hearing and seeing their classmates and teacher, and even hearing the sounds in each participant's physical environment. In the manner of the entangled twins of quantum mechanics, where an action performed on a particle in one place will affect its twin at a remote location, the thoughts, words, and actions of each participant will affect the thoughts, words, and actions of those

thousands of kilometres away yet connected to them by the co-presence of the synchronous online seminar room.

So for our students in the virtual octagonal room, there is not a true removal from the everyday environment; it still surrounds them and clamours for their attention. The temporary suspension of disbelief that allows them to take part in this meeting of the minds, like the "higher-level beings of pure energy" of some 1960s space opera, is but an illusion. As they are not really removed from their everyday surroundings, they are not really freed from the norms and expectations to which they are generally subject. At the same time, they have the security of being in familiar surroundings and can maintain a measure of protection from the total self-revelation required by physical presence, especially if they restrict the modes of their participation to exclude video. Unlike campus students who have made a physical transition to the learning environment, they may well be still surrounded by people associated with their roles in their physical environment. These friends, colleagues, or family members, whose ability to overhear them and to peer over their shoulder to see what is going on in the virtual environment, may severely hamper the students' freedom to immerse themselves in the virtual learning environment and to abandon themselves to its intellectual delights. The participants in the virtual learning environment may well experience a meeting of minds, but, at the same time, they are always tethered to their physical reality.

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Athabasca University

Social Presence within the Community of Inquiry Framework

David Annand
Athabasca University, Canada

Abstract

The role of social presence as defined by the community of inquiry (CoI) framework is critiqued through a review of recent literature. Evidence is presented that questions the actual extent of knowledge co-construction that occurs in most higher education settings and therefore challenges the framework's underlying assumption of the need for sustained, contiguous, two-way communication in higher-level online learning environments. The CoI framework has evolved from the description of a learning process within a social constructivist paradigm to an empirically testable construct in an objectivist paradigm. Related research results indicate that social presence does not impact cognitive presence in a meaningful way and that best teaching practices suggested by CoI-based studies are informed by objectivist, cognitively oriented learning theories. These suggest that higher-order cognition may be achieved through wide and varied combinations of learner–teacher, learner–content, and learner–learner interaction. Controlled studies can and should be undertaken to compare learning outcomes using sustained, contiguous, two-way communication to other learning models. To facilitate this, subcategories of social and teaching presences need to be revamped and analysis adjusted to separate processes that support explicitly group-based learning activities from those used by individual students.

Keywords: Online learning; online pedagogy; communities of inquiry; distance education; constructivism; cohort-based learning; individualized learning

Introduction

One of the most commonly referenced means for researching formal higher-level online education continues to be the community of inquiry (CoI) framework proposed by Gar-

rison, Anderson, and Archer (2000). Based on the content analysis and coding of computer conference call transcripts, emergent themes were identified and structured into three main attributes, which were described as social, teaching, and cognitive presences. The three subcategories within teaching presence were appropriate design of learning materials, facilitation of online discussions, and subject area ("directed") instruction. Cognitive presence was described as "the extent to which the participants in any particular configuration of a community of inquiry are able to construct meaning through sustained communication" (Garrison et al., 2000, p. 89). Four levels of increasingly desirable, overlapping subcategories of cognitive presence were proposed: triggering event, exploration, integration, and resolution. Garrison, Anderson, and Archer (2001) suggested that these measures of cognitive presence are "a means to assess the systematic progression of thinking over time" (p. 11). Garrison et al. (2000) described social presence as the projection of learners' personal characteristics into a community of inquiry through use of emotional expression, open communication, and various means to establish group cohesion.

In its original formulation, the three presences were represented as overlapping and interacting processes that determined the quality of the online learning experience. The now-familiar diagram is shown in Figure 1 below.
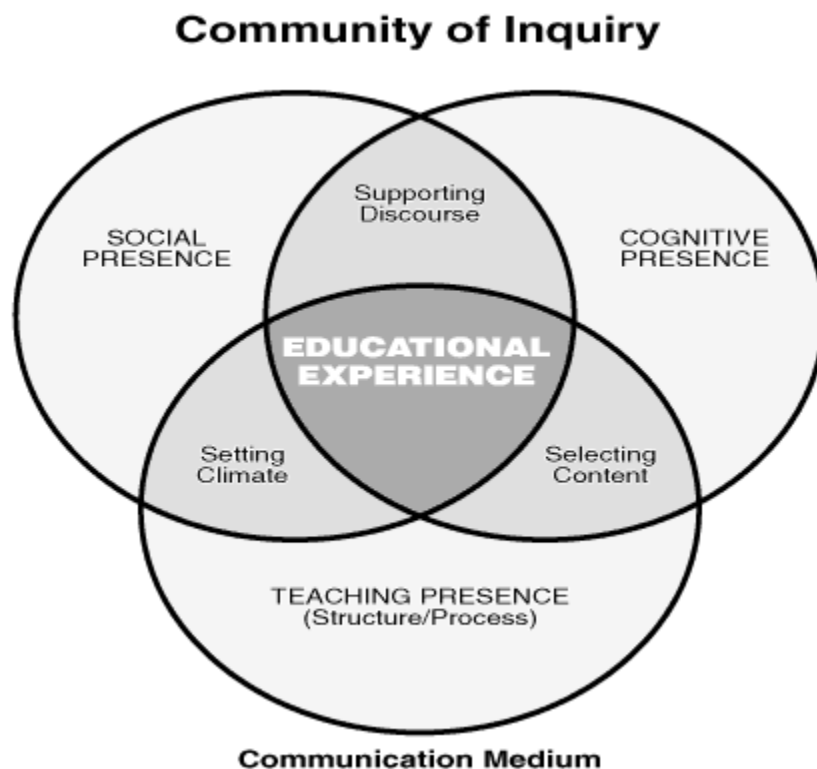

Figure 1. Elements of an educational experience (Garrison, Anderson, & Archer, 2001).

At about the same time, Garrison (2000) argued that theoretical developments in distance education were shifting from an emphasis on organizational issues to the more important nature of the educational transaction. Limiting effects of geography—the original impetus

for distance education—were largely eliminated with the advent of electronic communication technologies, along with learning theory predicated on this model (e.g., Holmberg 1989; Moore, 1993). Distance education's prior reliance on mass production of standardized learning packages and other features of the "industrial" era of distance education (Peters, 1983) was superseded because cost-effective, sustained, contiguous, two-way interactions among learners and between learners and instructors were now possible. The previous tensions between independence and interaction had been eliminated (Daniel & Marquis, 1979). The paced, cohort-based, electronic classroom model that best supports this interaction was later redefined as "online learning" by Garrison (2009a), as opposed to the traditional industrialized distance education model that allowed greater learner independence but restricted interaction among learners and between instructor and learner.

Rourke and Kanuka (2009) critiqued the CoI framework. They considered the central indicator of a successful online learning experience to be "deep and meaningful learning." They defined this as "the critical examination of new facts and the effort to make numerous connections with existing knowledge structures," contrasting it with surface learning, defined as "the uncritical acceptance of new facts and ideas" (p. 24). Following a review of almost a decade of CoI research, they concluded that deep and meaningful learning did not occur as described in the framework because "students are not engaged in the constituent processes" (p. 39) proposed by the framework, at least not in the context of an objectivist/empiricist paradigm, where deep and meaningful learning is regarded as the dependent variable under examination. Rather, students seemed to report instances of surface learning and to associate these more with instructional material (e.g., completion of assignments) rather than sustained interaction with the instructor or other learners. Only lower levels of cognitive presence had been identified to date in the literature. CoI-based research, they argued, suggested that students judge most learning, such as it is, to occur when didactic instruction is used, particularly individual written assignments and projects, rather than as a result of collaboration with their peers. They concluded that the CoI framework is deficient as a means to develop deep and meaningful learning, as a model for online learning, and as a program of research.

Akyol et al. (2009) responded to the issues raised by Rourke and Kanuka (2009) by first stating that the CoI framework is primarily a process model focused on the educational transaction within a constructivist orientation, rather than an outcomes-based measure within an objectivist orientation. Deep and meaningful learning, they argued, is a means to practically investigate the educational transaction process, not a dependent variable in an empirical research program. Indeed, measuring deep and meaningful learning as an outcome "does little to inform the teaching and learning process" (p. 131).

The purpose of this article is to raise additional concerns about the CoI framework and to support the position of Rourke and Kanuka, who argue that the framework, as it is popularly conceptualized, does not adequately inform the development of online education theory and practice. In particular, the influence of social presence on the learning experience within online higher education appears to be overstated. There are also significant inconsistencies in the way online learning environments are visualized as communities of inquiry and

The Question of Social Presence

Garrison and Shale (1990) suggested that sustained, contiguous, two-way communication between student and instructor was the appropriate hallmark of distance education because this process allows learners to negotiate and structure personally meaningful knowledge much like the educational transactions that occur in traditional classrooms. This need for sustained dialogue is integral to and interwoven throughout the CoI framework. Several authors (Garrison & Arbaugh, 2007; Shea & Bidjerano, 2009a; Garrison, 2009b; Shea et al., 2010) have asserted that knowledge construction within a community of inquiry must be a "moment by moment" negotiation of meaning as it occurs in a physical classroom setting. Without group-based interaction, learners cannot create the common values, goals, and language necessary for effective learning to occur. The many-to-many types of interactions this connotes are operationalized primarily within the concept of social presence.

Akyol, Garrison, and Ozden (2009), referencing Garrison and Anderson (2003), considered social presence to be critical and "an important antecedent to collaboration and critical discourse because it facilitates achieving cognitive objectives by instigating, sustaining, and supporting critical thinking in a community of learners" (p. 67). The authors also point out that students value social presence as a means to "share ideas, to express views, and to collaborate" (p. 76).

Much CoI-based research has focused on the role of social presence in the online learning experience. Garrison, Anderson, and Archer (2010) noted that the conceptualization of social presence has changed over time in order to show the connection of this activity more clearly to the formal educational experience. A progressive schema was proposed to illustrate social presence: initially, identification with the community, then purposeful communication within a trusting environment, and finally development of social relationships. Even so, Garrison et al. noted that more study of the relationship between social presence and cognitive and teaching presences was needed.

Shea and Bidjerano (2009b) noted that asynchronous group-based communications per se are insufficient to develop an effective community of inquiry, and this was the main point of Garrison and Cleveland-Innes (2005). However, the unexamined question is whether social presence and sustained, continuous, two-way communication (an integral component of it) is necessary *at all* to facilitate the development of higher-order cognitive presences and thence deep and meaningful learning.

Careful reading of CoI-based research seems to indicate that students do not attach much value to the group-based influences of social presence. A few studies have found social presence to be beneficially linked to some aspects of higher education learning experiences. For instance, Boston et al. (2009) analyzed results of a survey administered to almost 29,000 undergraduate students enrolled in the American Public University System. They found

that a small number of social presence indicators could significantly predict reenrollment patterns. But for the most part, support for the construct of social presence is limited at best. Kupczynski, Weisenmayer, and McCluskey (2010) studied a total of 643 students in two different educational programs at separate US higher education institutions, one two-year college and one four-year university. Though findings related to differences between the two student populations were conflated because courses and instructors differed, the researchers stated that variations in responses from the two student populations indicated that preferences for strategies like direct feedback were higher at the college level, perhaps indicating that the teaching strategy of direct instruction should be gradually replaced with more discourse as the course level increases to encourage greater social presence. However, while some of the student ratings of important instructor practices were considered by the researchers to enable social presence, these did not require collaborative activities (e.g., clarification of thinking, providing feedback, or communicating important course topics). Rather, these should be considered direct instruction techniques. As such, the overall influence of collaborative activities on social presence remained questionable.

Nagel and Kotze (2010) surveyed students in two master's and doctoral level courses in research methodology conducted within the Faculty of Economics and Management Science at the University of Pretoria during 2009. Each course had more than 125 students, so the amount of one-on-one time the instructor could provide was limited. However, the researchers still reported positive social, cognitive, and teaching effects, higher completion rates, and higher-category cognitive presences (such as integration and resolution). But the main technique that produced the observed effects was the one-on-one peer review, not group-based interaction, and this was an unexpected result. Nagel and Kotze also opined that social presence may develop as a *result* of other presences' interactions and may not be a precursor to cognitive presence at all. Shea et al. (2010) used a quantitative content analysis of approximately 1,000 online interactions across two identical undergraduate business courses taught by different instructors to measure the extent of the three presences and their interactions. They concluded that their findings indicate a possible lack of correlation between social presence and learning, noting that,

> ...several specific indicators of social presence are very difficult to interpret reliably. All of these issues indicate that the social presence construct is somewhat problematic and requires further articulation and clarification if it is to be of use to future researchers seeking to inform our understanding of online teaching and learning. (p. 17)

In a study conducted by Akyol and Garrison (2008), weekly discussion questions that required students to collaboratively discuss one specific aspect of a major individual assignment were associated with higher-level cognition. The activity, they proposed, allowed students to synthesize their ideas. Diaz, Swan, Ice, and Kupczynksi (2010) also concluded that online discussions that required problem-solving tasks allowed students to co-create knowledge and develop higher levels of cognitive presence when the group was supported by appropriate instructor facilitation. However, a different interpretation of the findings of

these two studies indicates that instructional design focusing learners on a major course requirement was the essential element contributing to the development of higher-order cognitive presences and that one-on-one peer review activities that require neither collaborative activities nor intentional creation of social presence are preferable.

Ke (2010) conducted interviews, transcript analyses, and surveys with 16 adult learners enrolled in nursing, education, and business management programs at the undergraduate through doctoral levels within a major research university in the United States. The purpose was to study the nature of and relationships among cognitive, social, and teaching presences reported by students and instructors. Adult learners preferred individual assignments and timely, encouraging, individualized feedback from instructors. Most respondents reported instances of deep learning but listed written assignments and direct instruction as the techniques that contributed most to these experiences. Students perceived online collaborative learning to be a "bonus" that was overemphasized. They considered it more useful for social purposes; also, it contributed to their learning by clarifying their own thoughts through the posting process rather than by enabling socially constructed learning. Motivations to participate were generally reported to be superficial and grade-driven.

Shea and Bidjerano (2009a) found that the "vast majority" of students achieved higher-level cognitive presences (integration and resolution) but that this seemed to be the result of activities other than online discussion forums. They surmised that online discussions "initiated" thought rather than completed the cognition process, but they also noted that collaborations consisted not so much of knowledge construction related to course content but of more administrative activity focused on the completion of group assignments. In other words, collaborative activities were necessary to complete collaborative activities, and students did not necessarily learn from them. Social presence effects on learning therefore could be either small or ancillary.

In a study of 124 distance- and classroom-based students enrolled in an advanced quantum mechanics course at the Open University of the United Kingdom, Gorsky, Caspi, and Smidt (2007) found that students tended to rely significantly on instructional material to learn, supplemented by limited but crucial dialogue with instructors—and that this was the case regardless of age, gender, prior acquaintance with other students, motivation, and importantly, mode of instruction. Classroom-based students learned individually at lectures and tutorials; online students tended to learn individually from instructional resources and one-to-one interaction with instructors. Greater *interpersonal* (among participant) dialogue was found in courses with limited enrollments and subject matter that was perceived as moderately difficult. *Intrapersonal* (within participant) dialogue was facilitated by learner–instructor interaction, used by students more when subject matter was perceived as easy or difficult, and more prevalent in large class settings. In a difficult course, Gorsky et al. argued, students are unable to help each other since most experience similar cognitive difficulties. In an easy course, interpersonal dialogue is perceived by learners to be unnecessary. In large courses, efficacious many-to-many dialogues are difficult to structure formally and instructor access is limited. Gorsky et al. thus argued that the importance of interpersonal dialogue is overrated in practice and is context-dependent and that social

learning theories generally tend to overstate the importance of group-based interaction in the learning process.

Gorsky and Blau (2009) used the CoI framework to analyze the practices of two instructors in online graduate-level discussions offered at the Open University of Israel. They found that the 42 volunteer students' perceptions of learning were not affected by differing instructor facilitation practices and surmised that higher-order cognitive presences were lacking because the course was only rated as average in difficulty. They concluded that cognitive presence correlates with difficulty of subject matter, not social presence.

Shea and Bidjerano (2008) found that social presence does not predict learner satisfaction and stated that prior research on factors similar to those measured by the CoI framework's concept of social presence did not contribute to self-perceived or actual learning. These did positively correlate with perceptions of group interaction and instructor effectiveness, but the links from these intermediating variables to actual learning were not established. They suggested that the importance of social presence, at least as it was developed within the design of the dozens of online courses their study covered, should be validated by additional research and different theoretical approaches. Akyol and Garrison (2008) studied the progression of constituent parts of the three CoI presences over time in a group of 16 graduate students by coding about 500 discussion forum messages. Their study did not find any correlation between social presence and learning and reported that "only two presences (teaching and cognitive presence) showed a significant relationship with perceived learning and satisfaction" (p. 15).

Analysis of the CoI framework was significantly enhanced by the development of the practical inquiry model (PIM), a unified instrument with approximately 34 to 37 items that surveys students' perceptions of their online learning experiences. The instrument was validated and refined in several studies (e.g., Shea, Li, & Pickett, 2006; Arbaugh, Bangert, & Cleveland-Innes, 2010; Arbaugh et al., 2008; Swan et al., 2008, Shea & Bidjerano, 2009a).

Diaz et al. (2010) administered the PIM survey to 413 graduate and undergraduate student volunteers at four US universities and colleges to determine learners' perceptions of the three CoI presences, their interactions, and the relative importance of each PIM survey item. Items rated as relatively low in presence but high in importance indicated areas where students' expectations and needs were not well met. In this study, social presence factors were rated as least important.

The PIM and its survey instrument also enabled more rigorous analysis of the relative effects of the three CoI presences. Shea and Bidjerano (2008) developed a structural equation model of self-perceived cognitive presence based on responses to a PIM survey from over 5,000 learners in dozens of US higher learning institutions that used a common learning management system and pedagogy. Their research made explicit the evolution of the CoI framework from one in which the three presences influence and interact to create the online learning experience (see Figure 1 above) to one in which teaching and social presences are hypothesized to causally affect cognitive presence, now considered the final mea-

sure of the online learning experience. Teaching presence is also considered to indirectly affect cognitive presence through its effect on social presence. These concepts are shown in Figure 2 below.
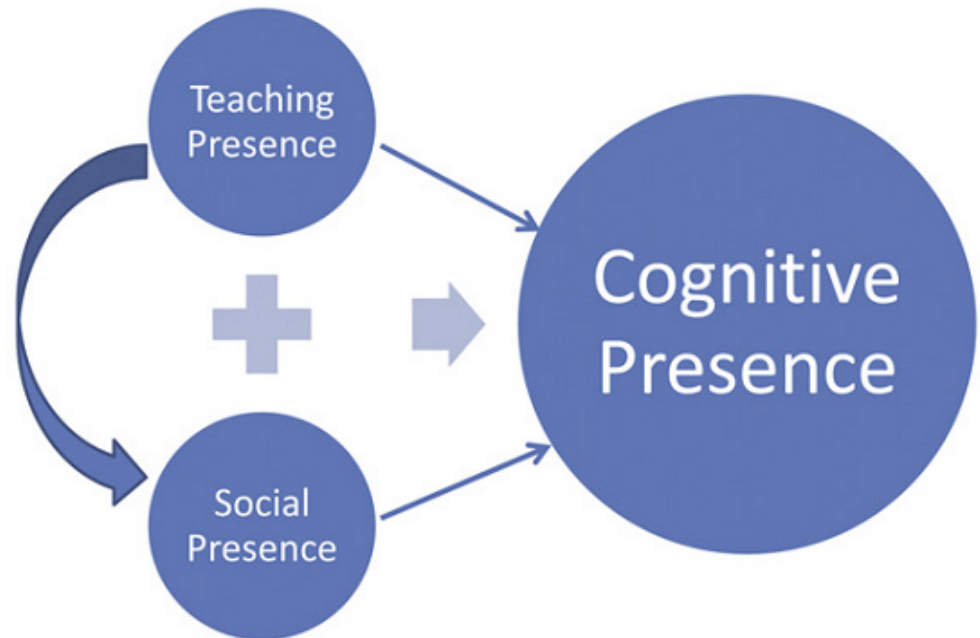

Figure 2. Relationship between teaching, social, and cognitive presences (Shea & Bidjerano, 2010).

Results from structural equation modeling seem to corroborate that social presence has a relatively unimportant effect on the online learning experience. Shea and Bidjerano (2009a) reported that students who experienced low social presence but high teaching presence still reported high cognitive presence and vice versa. They concluded that good teaching presence is an important compensatory factor in the absence of sustained, contiguous, two-way communication. However, they did not question to what extent direct instruction can or should be substituted for teaching activities that support social presence (e.g., facilitation of discussion), especially given the finite amount of time that instructors can devote to teaching. Diaz et al. (2010) also alluded to this, stating that limitations on instructional time suggest that "a higher priority be placed on providing timely feedback" (p. 25).

Shea and Bidjerano (2009b) found that three subcategories mostly identified with teaching presence explained about 67% of observed variance. Social presence factors predicted very little additional variance. Even at that, most of the social presence indicators influencing learner satisfaction consisted of individualized student activities, not group-based ones. "Facilitation of discourse," normally considered a category of teaching presence necessary to build social presence also included mostly motivational activities related to individualized learning activities (e.g., keeping students on task, providing feedback, and explaining course topics). These can be considered more akin to direct instruction activity, not tasks

that facilitate discourse and collaboration, thus reducing their social presence effects. Shea and Bidjerano also reported that appropriate course design reduced ambiguity and that this in turn appeared to make social presence factors less important.

Structural equation modeling conducted by Garrison, Cleveland-Innes, and Fung (2010) also raised interesting unanswered questions about the importance of social presence. Their data indicated that teaching presence predicted 51% of the observed cognitive presence effect, and social presence predicted 40% of the observed cognitive presence effect. However, teaching presence predicted 52% of the observed social presence effect. Taken together, the results suggest that teaching and social presences are highly correlated (see also Bangert, 2009). As a result, social presence may be either substantially produced by elements such as teaching presence, or it is an artifact of cognitive presence. Shea and Bidjerano (2010) found that combined social and teaching presences predicted only a little better than 25% of cognitive presence. They proposed a fourth construct which they called "learner presence," characterized as a combination of self-efficacy and individual effort. The combination of learning, teaching, and social presences predicted better than 75% of perceived cognitive presence in both blended and online learning environments. They proposed a revised version of the CoI framework that incorporated the effects of individual learner attributes on learning, as shown in the figure below.
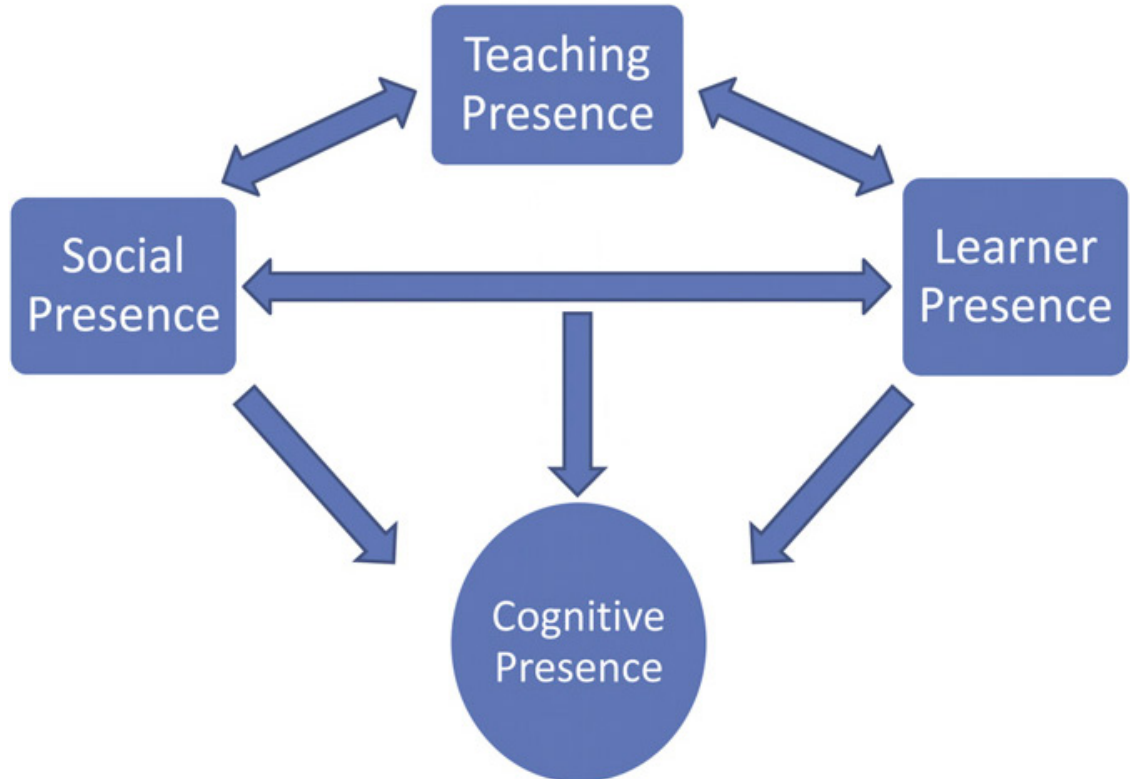

Figure 3. Revised community of inquiry model, including "learner presence" (Shea & Bidjerano, 2010).

Though informative, these three studies do not address the extent to which social presence affects cognitive presence without the mediating effect of teaching presence or, conversely, the extent to which teaching presence alone affects cognitive presence, either directly or through its mediating effect on social presence. For instance, Shea and Bidjerano (2009b) indicated that the standardized total effects path coefficient of teaching presence to cognitive presence is 0.72 (Table 2, p. 549). Garrison et al. (2010) obtained similar coefficients for teaching and social presence path effects (see Figure 1, p. 34). Depending on the correlation between teaching and social presences, teaching presence R^2 could be as high as approximately 0.50. In other words, non-collaborative teaching functions may significantly cause observed cognitive presence effects, whereas social presence effects other than those produced by teaching presence may be minimal. To illuminate these issues, additional calculations should be performed on the data sets and published.

The results of Shea and Bidjerano's research (2010) reported above and the proposed construct of learner presence also indicate that teaching activities focused on individual intellectual development have significant effects on cognition. This is similar to results reported by Means, Toyama, Murphy, Bakia, and Jones (2009). Means et al. conducted a metaanalysis of approximately 100 studies published between 1996 and 2008 comparing online, blended, and classroom learning outcomes, primarily in higher education. The most successful online metacognitive learning strategies they observed all involved encouraging individual efforts in self-reflection, -explanation, and -monitoring.

The recurring suggestion of recent CoI-based empirical research is that social presence is of questionable value in the online higher education learning experience because it does not appear to have an important effect on cognitive presence. Rather, appropriately structured learning materials, timely, non-contiguous, one-on-one instructor–learner communication, and a teaching focus that enhances individual learner attributes and effort may be the best prescriptions for effective online learning in higher education. Limited group-based collaboration may be able to uniquely develop certain interpersonal skills, like the ability to interact with multiple learners and manage group dynamics, but it may not be necessary to synthesize knowledge or achieve other valued higher-order learning outcomes. Further, CoI-based research to date has neither incorporated nor sufficiently studied unstructured, student-initiated effects on social presence—for instance, the extent of one-on-one mutual support, instruction, and encouragement students provide to one another outside of formal class structures (Gorsky et al., 2007). These possibilities all cast doubt on the assumption underlying the CoI framework that sustained, contiguous, two-way interaction operationalized within formal, paced, and cohort-based "electronic classrooms" is required for effective online learning to occur and, related to this, whether discourse facilitation by instructors is the best use of their finite time.

CoI proponents argue that sustained communication enabled by paced and cohort-based groups of students is necessary because realities are subjective and multiple, and knowledge is co-constructed. As such, learning should be practiced communally on an ongoing basis, driven by a particular question or problem that is examined within small groups which are supportive of critical discourse and multidisciplinary in nature, and the question

must be researched using methods like information collection and synthesis. This idealized version of online learning communities exhibits many similarities to communities of practice proposed by Wenger (1998) as the process of learning within organizations in general. But there are significant differences between higher education and formal work situations, with resultant effects on the way online communities generally develop and function in each environment. The main means of sustained, contiguous, two-way communication in extant higher education online learning takes place in discussion forums or similar group-based mediums. These generally mandate participation, focus on one narrow topic, and are limited in duration to usually no more than 13 weeks. Perhaps most importantly, higher education is generally characterized by the presence of one expert and many novices, particularly at the introductory and intermediate undergraduate levels. As a result (and unlike Wenger's framework), shared competence is often absent, and actual learning is based on meaning-making, an interchange of experiences, and the negotiation of subjectively perceived realities by a community of like-minded peers is restricted in both design and practice. It is this resulting artificiality of the online learning experience that impedes the formation of true communities of inquiry in most higher education settings and therefore significantly undermines in practice the perceived effects of collaboration and the assumption that co-construction of knowledge is occurring.

Recent CoI-based research that considers all aspects of the formal online learning process indicates that learning practices more closely associated with cognitive learning theory and the objectivist paradigm are most effective, though these are often couched in constructivist terminology. For instance, Swan (2010) suggested that diagnosing and remediating learner misconceptions is important, though remediation is "accommodated" rather than "corrected." Individual (or "personalized," in constructivist lexicon) learning characteristics are also important, as are continuous assessment and feedback. Swan (2010) and Ice (2010) advocate technologies like computer-based learning. Nagel and Kotze (2010) noted in their research that "behaviorist" teaching practices, like significant instructor feedback and computer-based writing analysis, were used to raise students' writing levels to an acceptable level. But their recommended "constructivist" tool set consisted of one-on-one peer review, and the practice as described had little to do with co-construction of knowledge. In fact, all of these are not simply preparatory "scaffolding" techniques in a social constructivist paradigm. They are the principal means of providing significant learning experiences in the education process and are rooted in cognitive learning theory. As Kirschner, Sweller, and Clark (2007) stated, controlled studies almost uniformly suggest that strong guidance is needed during the instruction of novices and intermediate learners to minimize cognitive load on short-term memory during the initial learning process. The practices described above support this contention. They are efficient and sufficient means to acquire domain-specific knowledge by first understanding a particular task or concept, limiting working memory cognitive load, gradually acquiring more complex cognitive skills, and finally developing a coherent knowledge structure within long-term memory that gives meaning to experience.

CoI proponents may object that these ways of scaffolding do not result in higher-order cognition but are only a partial means to this end. Sustained, grouped-based interaction is

also a necessary ingredient. But there is little evidence that problem-based or exploratory learning, continual negotiation of subjective realities, or other constructivist concepts have been applied in CoI-based research settings at most levels of higher education with added, essential effect. When all elements of a particular course are considered, the predominance of scaffolding effects on learning significantly dispute the assumptions of most CoI-based research that (a) a social constructivist learning orientation is the operational paradigm; and (b) co-construction of knowledge is taking place within most online (or classroom, or blended) higher education settings. CoI proponents need to explain more clearly how the learning environments studied and best educational practices prescribed actually differ from those based on learning theories arising from an objectivist orientation.

Other objections may be raised by CoI proponents—for instance, that cognitive learning techniques may be applied in most higher education settings, but not much higher-order cognitive presence is being achieved. Arbaugh, Bangert, and Cleveland-Innes (2010) followed this line of reasoning and added that as a result, application of the CoI framework might be better suited to "soft" disciplines rather than "hard" ones, particularly at advanced levels. In hard disciplines, theory is well established and accepted, more emphasis is placed on knowledge acquisition, and teaching is more directed than facilitative. In soft disciplines, theory tends to be contested or less developed. Consequently, teaching in soft disciplines is more constructivist-oriented and iterative, with emphasis placed on reflective practice and the development of transferrable skills, and higher-level cognitive presences are achieved. However, this is an artificial distinction. Disciplines relying on well-established and empirically supported theory may require less *resolution* activity, for instance, since outcomes are robustly predicted. But this would not limit the development of *critical thinking* skills in hard disciplines. There is little evidence that these cannot be developed within any appropriately structured course. Rather, it may be that the conceptualization of higher-order subcategories of cognitive presence within the CoI framework (such as integration and resolution) is too restricted because it associates only these attributes with critical thinking and ignores other valid constructs. The framework, its presences, and constituent subcategories originally arose from a narrow evidential base, the transcripts of formal online discussions. In these forums, resolution may indeed be indicative of higher-order cognitive presence. However, in a broader, whole-course context, higher-order cognition (or critical thinking, or deep and meaningful learning) can also involve the process of recognizing problems, determining applicable evidence, detecting unstated assumptions, evaluating arguments, and drawing logical inferences. Techniques to develop these attributes are not the sole purview of constructivism. These can be equally developed in objectivist-based learning and in hard or soft disciplines. If higher-order cognitive presence indicators within the CoI framework were more broadly formulated, hard disciplines might be as amenable to the development of learners' critical thinking capacities as soft ones.

Conclusion and Directions for Future Research

The main point of this article is that in higher-level online learning environments, the CoI

framework has evolved from a description of the learning process in a social constructivist paradigm to an empirically testable construct within an objectivist paradigm. Related research results indicate that social presence does not impact cognitive presence in a meaningful way. As such, the CoI framework's conceptualization of online learning as a process necessarily supported by collaborative, constructivist activity requiring sustained, contiguous, two-way communication is called into question. Perhaps the primary reason that these conclusions have been perpetuated is that the framework was originally developed based on the analysis of web-based conference call transcripts, evidence arising from a collaborative activity that is generally only a subset of a higher-level online learning environment. As a result, researchers assumed these discussion forums occurred within a social constructivist paradigm. The framework derived from this limited evidence has overstated the effects of sustained collaboration on the construct of social presence. This in turn inappropriately magnified the effect of social presence on cognitive presence. As CoI-based research has expanded to encompass the complete higher education online learning experience, effects of individual learner attributes and teaching processes that impact directly on cognition have become more apparent, though these are generally unacknowledged within mainstream CoI research. This research needs to be reevaluated to more clearly determine the relative influence of group-based social presence categories on the learning process.

Akyol et al. (2009) stated that "seminal CoI work does not exclude the consideration of intended learning outcomes" (p. 124). Indeed, objectivist-based distance learning theory suggests that higher-order cognition may be achievable through wide and varied combinations of learner–teacher, learner–content, and learner–learner interaction (Moore, 1989). Now that CoI-based research has moved into the realm of empiricism, controlled studies can and should be undertaken that compare learning outcomes resulting from sustained, contiguous, two-way communication to other learning models. Research should also more closely examine informal learning effects on cognition and whether more effective learning occurs in formal settings of sustained, contiguous, two-way communication compared to cohort-based learning environments where limited, formal learner–learner interactions are incorporated, and even individualized distance learning environments where formal learner–learner interactions may be significantly curtailed. To facilitate this, subcategories of social and teaching presences as currently classified in the CoI framework need to be revamped and analysis adjusted to separate those processes that support explicitly group-based activities versus individual learning activities. This would isolate social presence effects produced by sustained, contiguous, two-way interaction from those produced by, for instance, informal one-on-one student interactions and more appropriately determine the extent and types of social and teaching presences necessary to support deep and meaningful learning in online higher education.

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Role Engagement and Anonymity in Synchronous Online Role Play

Sarah Cornelius, **Carole Gordon,** and **Margaret Harris**
University of Aberdeen, UK

Abstract

Role play activities provide opportunities for learners to adopt unfamiliar roles, engage in interactions with others, and get involved in realistic tasks. They are often recommended to foster the development of soft skills and a wider perspective of the world. Such activities are widely used as an online teaching approach, with examples ranging from the simple use of email to the employment of virtual worlds and Web 2.0 technologies.

This paper provides a case study of a role play activity which employs real-time anonymous discussion forums and aims to improve our understanding of effective role play and the impact of anonymity. This role play has been effective in educating learners about different perspectives on the issue of Quality in Further Education. The context and implementation of the role play are outlined, and the learners' interactions and experiences are explored using an investigative analysis of discussion transcripts and semi-structured interviews with participants. The findings suggest that role engagement and anonymity are important components for success in synchronous online role play. Evidence is presented that provides an insight into the factors which encourage role engagement, including prior experiences and contributions from peers. The impact of anonymity is also explored since many participants did not regard the study environment as real and attempted to identify their peers.

Keywords: Online role play; anonymity; role engagement; Web 2.0; virtual world

Introduction

Bell (2001) describes role play as a "teaching method that provides an imaginary context in which issues and behaviours may be explored by participants who take on a specific role or character" (p. 256). Aiming to assist in the dissemination of online role play as a teaching

method, the Australian Project EnROLE has conducted significant work to describe and encourage the reuse of role play activities (Wills et al., 2009; Wills & McDougall, 2009). Drawing on this project, Russell and Shepherd (2010) described online role play as an authentic task in an authentic context, which requires learners to step into someone else's shoes and which is facilitated through in-role human interaction. Bell (2001) and Russell and Shepherd (2010) point to three key elements which exist in an online role play: (1) an authentic task in a context which permits exploration of issues or behaviours, (2) the need for participants to engage with their role, and (3) the need for interaction between roles.

There are many examples of online role plays implemented using a range of technologies, from email (Vincent & Shepherd, 1998) to virtual worlds (Gao, Noh & Koehler, 2009), and they can be found in diverse disciplines including business, education, and natural resource development (e.g., Freeman & Capper, 1999; Bell, 2001; McLaughlan, Kirkpatrick, Hirsch, & Maier, 2001). Technology provides opportunities to replicate authentic contexts for learning, including learning through role play, and practices with technology can create new contexts for learning (Thorpe, 2009). Jordan (2009), for example, described an online role play which allowed participants to practice the application of skills that they were likely to use in their professional lives. In this case, blogs and wikis were used to facilitate communication between remote participants, who worked together to resolve a fictional contractual dispute between parties on a construction project. More immersive environments for role play scenarios can be created using technologies such as virtual worlds. Gao, Noh, and Koehler (2010) conducted role play activities in Second Life, alongside equivalent face-to-face activities, to allow undergraduates taking an educational psychology course to explore issues of motivation. Their findings suggest that participants found the Second Life role play more interesting and less formal than the face-to-face role play and also that students took "conversational turns" more frequently in Second Life but had shorter exchanges than in the face-to-face activity. This indicates that the immersive environment created a different context for the activity.

It can be argued that the impact of different technologies on role play activities is not fully understood. For example, Russell and Shepherd (2010) suggested that it is not yet clear whether the use of immersive environments, such as Second Life, help or hinder student engagement with learning from a role. Complex immersive environments may not be necessary at all for effective role play. Based on their studies of computer games, Reeves and Ness (1996, cited in Westera, 2009) suggested that experiences which draw on limited representational and technological "efforts" can provoke true interpersonal responses, which are clearly important in an effective role play. Westera (2009) concluded that credibility is more important than realism or authenticity and suggests that "even fictitious, non-existing, non-authentic realities may provide valuable learning experiences" (p. 4). Riddle (2009) has reassessed online role play through theoretical frameworks, such as performative self-constitution and actor-network theory, and suggested that these frameworks raise issues of identity and role engagement which may "relieve us of the burden of proving that a learning environment is actually authentic" (p. 71). Given that during a role play the performances and interactions of participants help to shape the context, enabling participants

to play their roles effectively may, therefore, be more important than providing a realistic environment.

All role plays have the potential to provoke anxiety and apprehension for some participants. However, online role play may provide an experience which is emotionally safer and less risky than a face-to-face equivalent (Freeman & Capper, 1999; Bell, 2001). In particular, participants in an online role play can remain anonymous, which may increase equality of opportunity, support honesty, and disclosure, offer increased choice, encourage high participation rates, and remove gender and cultural expectations (Chester & Gwynne, 1998; Freeman & Capper, 1999; Sullivan, 2002). In earlier research, we (Cornelius, Gordon, & Harris, 2009) reported that participants in a synchronous, anonymous role play had a generally positive attitude toward anonymity but that there was also the potential for anonymity to contribute to inequality in participation. Other authors have observed playfulness in anonymous participants (Freeman & Capper, 1999), and theft of identities and flaming (hostile or insulting interactions) have also been reported (Chester & Gwynne, 1998; Freeman & Bamford, 2004). These findings, and the work of Bell (2001), which called for further research to explore how anonymity affects involvement in online role play, suggest that the question of whether genuine anonymity can be useful or achievable deserves further consideration.

The Quality in Further Education role play, which provides the case study for this paper, is outlined below, together with research undertaken to investigate learners' actions and experiences of this activity. This role play used discussion forums in real-time as the technological setting and allowed participants to be anonymous. The findings presented explore the issues of role engagement and the impact of anonymity. This study builds on previous research into earlier implementations of the same role play, which highlighted the diversity of learners' experiences (Cornelius, Gordon, & Harris, 2009; Harris, Cornelius, & Gordon, 2009), and aims to improve our understanding of effective online role play.

The Quality in Further Education Role Play

Online role play has been included as part of the Teaching Qualification in Further Education (TQFE) at the University of Aberdeen since 2006 to help participants explore issues of quality in Further Education and understand a range of perspectives on these issues. The TQFE is a flexible, work-based program delivered in a variety of formats, including online distance learning. For the participants who were the subjects of this study, the program was a blended learning experience, incorporating occasional face-to-face workshops, collaborative group investigations, and distance learning supported by web-based activities and resources. Participants were all lecturers from Scottish Further Education Colleges who have some prior experience with online learning and have previously engaged in asynchronous online discussions. The Quality in Further Education role play is what is known as a *round table* activity, in which professional stakeholders meet in an online forum which represents a face-to-face meeting (Russell & Shepherd, 2010), although in the TQFE role play this

meeting takes place synchronously rather than asynchronously, as Russell and Shepherd suggest. Participants are all at a distance for this activity, with some working from home and others from their workplace. In-role exchanges take place anonymously in real time using WebCT discussion forums over a period of approximately 90 minutes. The scenario is introduced as follows.

> The scenario is that you been invited to join a working group to consider issues of quality in your college. You are about to have your first meeting, and at this meeting you need to consider what quality is and what it means in your college.
>
> You will be given one of the following roles.

- **Student** – an elected representative from the students' association;

- **Tutor** – an elected representative from the teaching staff in the college;

- **Support staff** – a janitor, librarian, learning support advisor, member of cleaning staff, or any other support role, and an elected representative of the support staff;

- **Manager** – a member of the senior management team with an interest in quality.

Roles are normally assigned through an attachment to a message posted by the tutor in the discussion forum. In the attachment learners' computer ID numbers are used rather than their names to try to preserve anonymity (this attachment is deleted as soon as the activity is underway as another measure to maintain anonymity). Small groups (normally four to six participants) then move to separate discussion threads or meeting rooms. Participants start by posting a statement on what quality means from their perspective and then are asked to discuss and explore issues raised through the exchange of messages. The activity concludes with reflections on whether participants have changed their minds about their original position and the opportunity to compare their group's discussion to others taking place at the same time. This helps to draw out differences and similarities, key messages about quality, and other learning. Until they post their final reflections, participants remain anonymous.

We have conducted this activity successfully since 2006, and in 2007–08 we began to explore issues of anonymity, effectiveness, and knowledge exchange (with results reported in Cornelius, Gordon & Harris, 2009; Gordon, Cornelius, & Harris, 2009; and Harris, Cornelius, & Gordon. 2009). In 2009–10 we conducted further research to explore in more depth some of the issues raised. For the research reported in this paper we adopted an investigative qualitative approach and drew on role play transcripts from WebCT and semi-structured telephone interviews with a selection of participants. Fifty-three participants (represent-

ing 10 separate groups who undertook the role play) gave permission for their anonymous WebCT messages to be analyzed, and 16 volunteers took part in semi-structured telephone interviews. We preserved the anonymity of respondents throughout the research, and any references to individual colleagues or colleges were removed from transcripts. As well as being researchers, we are also tutors for the program and care was taken to ensure that interviews were not conducted by a participant's own tutor. Interviews explored learners' experiences of the role play, including the issues of role engagement, anonymity, behind-the-scenes communication, knowledge transfer, and learning outcomes. Data were summarized to provide background information about respondents then coded by the three researchers using a constant comparative approach to identify emerging themes.

We also coded the WebCT and interview transcripts. In previous work (Cornelius, Gordon, & Harris, 2009), analysis of data was informed by a grounded theory approach, which allowed findings to emerge from the data rather than being influenced by any preconceptions. In the research reported here, we used the themes which had emerged from earlier work to generate specific questions to inform the coding of data. A number of questions were used to analyze the WebCT transcripts:

Were there any critical moment or events?

Is there any evidence of changes in perception of quality taking place?

Is there any evidence of real "role engagement" (e.g., speaking in student voice)?

Is there any evidence of interpellation (e.g., actions of others helping individuals get into role)?

Is there any evidence of problems affecting role engagement?

Is there any evidence of affect/emotional engagement?

Are there any instances of humour in the discussions?

Are there any instances of obvious knowledge transfer?

This paper merges data from the transcripts and interviews. It focuses on findings which relate to issues of role engagement and anonymity. The effectiveness of the activity is also considered. Other issues we explored during the research, particularly knowledge transfer through role play, will be reported elsewhere. This is a case study of a single role play and thus findings may not be generalizable to other online role plays. In addition, participation in the research was voluntary, and as a result the views of all learners who have undertaken the role play are not represented. However, the findings provide insight into the experiences of participants and may have relevance to other designers of role plays.

Role Engagement

Working in-role is an important element of any role play and is significant in shaping the context for the activity. Being in-role and online provides freedom of expression, reduces the anxieties that would be associated with giving a face-to-face physical performance, and encourages risk-taking that can include actions such as trying out novel methods or solutions (Bender, 2005; Jordan, 2009). Anonymity heightens all of these opportunities, offering even more benefits, but also provides challenges for role play participants and facilitators. For example, they may be required to manage inappropriate contributions or provide support to individuals (Cornelius, Gordon, & Harris, 2009).

In the Quality in Further Education role play, some participants commented on how well roles had been performed.

> "[other people played their roles] brilliantly ... everyone took their roles really seriously ... it almost felt that you were speaking to the actual people." (Interviewee)

> "I think that everyone really engaged in it and seemed to try hard to take responsibility for the role they had been given and to make a contribution." (Interviewee)

Three factors appear to have helped role engagement: familiarity with the role being played, direct questions being asked of individuals, and exchanges with others.

The lecturer and student roles were the most familiar to participants. Participants playing student roles cited their own experiences as learners and current engagement with students as important influences on how they played their roles. One interviewee also noted that playing the role of a manager was easy because, according to her, it "was in my nature," which again highlighted familiarity as a factor in positive role engagement. The option to choose from a range of support roles (for example, janitor, librarian, or receptionist) also helped to promote engagement as it gave students the opportunity to select a familiar role.

> "The janitor is the one I could most identify with, out of the support roles. If I'd chosen any of the others ... I'd have felt quite uncomfortable, because I don't know what they do." (Interviewee)

When the role allocated was not so familiar or engaging, it had a negative impact on engagement:

> "I was disappointed in the role that I was given. I was not as enthusiastic as I might have been. It was important, but not meaty enough." (Interviewee – Cleaner)

Familiarity also allowed participants to adopt an appropriate voice to help them perform

their role, and evidence of these voices is available from the discussion transcripts. For example, managers frequently adopted a confident, formal voice and sometimes referred to themselves in the third person, students used informal language and grammar, and lecturers at times adopted a teaching and learning vocabulary. Support staff voiced their opinions in a range of styles, but there was evidence of "thinking into their role," which influenced the contributions they made. In interviews, several respondents acknowledged that they had consciously attempted to adopt an appropriate voice, as the following examples from WebCT transcripts show.

> "Good morning …. It is clearly important as management that we ensure that standards are maintained." (Manager)

> "I see my role as setting, promoting, and monitoring quality and ensuring that my staff have the right resources to achieve those standards in the right way, at the right time, at the right cost." (Manager)

> "… surely their [*sic*] should be differentiation." (Lecturer)

> "now where's my iPhone so I can check Twitter and Facebook and MySpace and Bebo statuses. This is, well, boring!!! Ha-ha." (Student)

> "I just did this course to keep my mum off my back. Lecturers are just like parents and teachers, all rules and stuff—I don't see the point." (Student)

> "I am off for a smoke to think about my thoughts, will be back in 5 to let you know." (Janitor)

Riddle (2009) explored issues of performance and identity in an online role play in which learners played the roles of journalists and political advisers in the final stages of an election campaign. He acknowledges Althuseer (1977), who used the term interpellation to describe the process "by which individuals are recruited and transformed into subjects" (as cited in Riddle, 2009, p. 65). In a role play, the actions of others may help individuals to interpellate themselves as the subject. For example, a question posed by a student to a manager might encourage them (or recruit them) to get into their manager role and offer an appropriate in-role response (i.e., transform them into this role).

There is evidence of interpellation from the Quality in Further Education role play transcripts. The need to respond to direct questions from other roles is one example. For instance, a tutor posted, "I would like to ask a manager how they believe that they can measure the quality of their lecturer through their training." This is an example of the type of question which helped others get into their roles and respond in an appropriate voice. Direct questions had a clear impact on this interviewee: "I was fending off everybody … the

questions or the responses that were coming back … you think 'well no, I'm going to defend my college.'" (Manager)

Further evidence of interpellation comes from a subtle playing out of real-life power dynamics. This was particularly evident from those in support roles.

> "I was only really speaking to the librarian. The lecturer or the principal never came into that line of conversation. I didn't have a real place in the conversations." (Interviewee – Janitor)

> "I couldn't join in the conversation as a professional. A domestic would not join in the conversation.… I played my role as a domestic … I put in comments about students and being taught respect … but the others were concentrating on classroom management. I couldn't add anything from my role's perspective in the conversation but I would have liked to contribute." (Interviewee – Cleaner)

Finally, lengthy exchanges between participants also encouraged role engagement. One example was an exchange over five messages discussing the issue of meetings that involved a manager and lecturer in which both participants remained effectively in role. Individual and collaborative visualizations of real or imagined events also appear to have encouraged role engagement and sometimes prompted longer exchanges. For example, one librarian referred to "our book sale last year," and an exchange of messages in another group was prompted by the suggestion that chairs were needed elsewhere in the college and could be removed from the library.

In addition to the actions of others enhancing role engagement, the real-time element of the activity had an impact on the effective adoption of roles for some participants.

> "The responses of others in real-time helped, as they made me respond as if I was a janitor." (Interviewee)

It was suggested earlier that the ready-made realism that can be found in virtual worlds may detract from students' active involvement in performing their roles (Linser & Ip, 2005) and that providing an appropriate setting for role engagement may be more important (Riddle, 2009). For the Quality in Further Education role play, it does appear that role engagement was not hindered by the lack of realism in the setting and that participants did adopt strategies including direct questions and the visualisation of scenarios to help facilitate in-role interaction.

Issues also emerged which had a negative effect on role engagement. Disengagement with roles can be an issue in online role play (Bell, 2001; Freeman & Capper, 1999), and a lack

of engagement by some members of a group affected other participants, reducing their opportunity (and possibly motivation) to contribute.

Bell (2001) suggested that group size may impact on engagement (recommending a minimum group size of eight for an asynchronous role play); however, no evidence of such impact has emerged from the Quality in Further Education role play. Other issues such as technical and navigational difficulties affected a minority of participants. There was evidence of a lack of role playing when individuals became confused about their role or allocated meeting room or faced other technical difficulties. Such instances support Thorpe's (2009) assertion that technology can undermine as well as support learning in technology-mediated contexts, which may have little in common with a face-to-face context.

A few respondents commented on the pace of the activity. Some felt it was too slow, but there were also those for whom it went too fast. In the latter category were those who characterized themselves as having poor typing skills and slower reading speeds, for whom just keeping up with the role play was a challenge. Bell (2001) identified students from non-English speaking backgrounds as participants who may face particular difficulties; however, in this study all interviewees were native English speakers.

Russell and Shepherd (2010) suggest that one of the criteria that can be used to assess the usefulness of a space for online role play is the level of immersion or authenticity it provides. The environment should allow "activity in role without external distractions" (Russell & Shepherd, 2010, p. 9). Riddle (2009) identified backstage communications among role play participants, which is an example of an "external distraction," and these often took them out of role. For example, they used a different, perhaps less formal voice in email exchanges than in discussion forum messages. Clearly such communication affects the realism of the role play and disrupts role engagement. Since the Quality in Further Education role play was a synchronous activity, there was probably insufficient time for much backstage collaboration to develop; indeed, as previously mentioned, some participants found it difficult to keep up with the pace. However, in a few instances participants were working at computers in the same room and some interaction did occur:

> "There was someone in the same workroom, but in a different [role play] group. She was laughing at what she was reading, and I was laughing at what I was reading. But we weren't communicating with each other at all." (Interviewee)

The references to laughter indicate a sense of emotional engagement and shared experience but don't suggest collaboration on the activity. Other participants clearly required peace and quiet to work independently on the role play: "I was in a room on my own, I just needed to focus." (Interviewee)

Finally, when they were asked about the realism of the scenario, respondents frequently returned to the issue of role engagement, rather than any issues associated with technology

or the credible reproduction of a realistic environment: "I really felt that I was responding to the people I was supposed to be as opposed to lecturers playing particular roles … so yes, I think it was quite realistic" (Interviewee) and "If everyone is engaged it makes it more real" (Interviewee).

These views again back Riddle's (2009) claims that in-role interaction in a credible setting is a key element for effective online role play, allowing educators to be relieved of the burden of providing authentic learning environments. What appears to be important for an online role play is the provision of an appropriate scenario which allows learners to "self-constitute their roles and interpellate others" (Riddle 2009, p. 71). Thus, issues of role engagement may be more significant than the authenticity of the context or the task.

Anonymity

Our previous work (Cornelius, Gordon, & Harris, 2009) and this study have revealed that participants did not consider the anonymity provided for the Quality in Further Education role play to be real, but being anonymous does have an impact on their engagement and experience. Sullivan's (2002) study of female college students identified anonymity as an important aspect of learners' online experience. Although focusing on online experiences in general rather than role play in particular, this American study suggested that anonymity could offer equality of advantage, increased openness and honesty, lack of stereotyping, bias, or judgment based on appearances, the ability to share things that participants would not have felt comfortable sharing face-to-face, the removal of fears, and help in the development of trust. Among the participants in the current research, anonymity also contributed to their ability to speak freely in role.

> "I didn't care who the other member of the team was that I was responding to because I was just responding to them as a job title and not as a person within our group." (Interviewee)

> "I thought 'well [anonymity's] quite good, because it means you can say whatever you want to say' and even if you messed it up it wouldn't matter…. I was kind of glad that maybe people didn't know who you were because maybe they would judge you on what your opinion was or how you were answering." (Interviewee)

However, others expressed the view that it made little difference to their engagement: "I think I would have given my comments even if it was face-to-face … but [anonymity] made it interesting" (Interviewee).

Generally, anonymity was a feature which engaged participants and added interest to the activity. It was viewed as a challenge by some participants, who admitted to spending time trying to identify their group members. The "voice" of participants sometimes gave away their identity, and once uncovered this may have had an impact on how the other partici-

pants responded to them.

> "I worked out who some people were based on their comments. The manager I instantly worked out even though they were supposed to be in role." (Interviewee)

> "It was interesting … trying to work out who everybody is … if it's someone you know well you're trying to be humourous with them, and if it's someone you don't know so well, you're probably being a bit more formal." (Interviewee)

Other participants were happy to preserve the anonymity.

> "I was quite happy not to know who they were; I was quite enjoying communicating on that level." (Interviewee)

> "People wanted to find out who was who. I did not actually try to find out who they were." (Interviewee)

It is probably impossible to offer genuine anonymity in an online role play activity such as this, and indeed this may be undesirable from the facilitator's perspective, given the difficulties that may result if inappropriate behaviour occurs, such as the playfulness and more serious antisocial behaviour reported by Freeman and Capper (1999), Chester and Gwyne (1998), and Freeman and Bamford (2004). It is also an issue if support is needed by those who have remained silent through the role play, for example, but who cannot be identified due to their anonymity.

However, methods to improve the preservation of anonymity can be considered. For example, roles could be allocated to individuals by email, and then the discussion can be set up in a separate technological environment where participants must log in with a role ID rather than a personal ID (Russell, 2009). However, technical and organizational constraints may make such measures challenging. Russell and Shepherd (2010) note that efforts to ensure anonymity may be "hampered by institutional systems where student online access is locked into automated enrolment administration" (p. 8). In addition, if participants already know each other there is always the possibility that they will communicate "behind the scenes" to sabotage such creative strategies or indeed be able to identify a participant from the manner of their responses. Despite the technological tools on offer, it is likely that anonymity cannot be guaranteed and the best that can be done is to make it difficult for participants to find out who their group members are because for some participants not knowing who is in their group appears to encourage engagement with the role play.

Effectiveness

Even if role engagement is good and anonymity is preserved, the Quality in Further Education role play cannot be regarded as effective unless learning occurred as a result of participation. The objectives of the activity were to allow participants to experience different perspectives in relation to quality in further education and to be challenged to revisit their own thinking and attitudes about those issues. There is evidence from posts to the final reflective task and from the interviews that the activity did allow an appreciation of different perspectives and a better understanding of different roles to develop.

> "Having been given the support role [I now realize] how little I understood about the role before I started." (Interviewee)

The activity also prompted contemplation about personal attitudes toward quality and related issues.

> "I hadn't thought about some issues that you often lose sight of when you are just trying to get on with your own job." (Interviewee)

> "It suddenly became very clear to me that I expected the earth ... I am actually quite embarrassed thinking about it." (WebCT transcript)

An appreciation of the bigger picture of quality also emerged, including a better understanding of the subjectivity, complexity, and scale of the issue of quality, and of the need for everyone to be involved.

> "I think the biggest thing I have learned about quality is that it is in everything we do." (WebCT transcript)

> "I am more aware that we all work together ... and each contributes to a quality learning service." (WebCT transcript)

Interviews also revealed that learning about the process of conducting an online role play was significant, in some instances leading participants to implement similar activities with their own students. Although anonymity was welcomed as a feature of the role play, there was some reticence shown by participants to employ this strategy with their own learners.

> "The anonymity is something to think about because in some cases this may be advantageous but in others a disaster." (Interviewee)

For some participants, however, barriers to engagement and reflection may have impacted

on learning, and these included the pace of the activity due to its synchronous nature.

> "I enjoyed today's online experience, but I do need a proper rest … my brain is literally boiling. It was extremely fast for me but I did my best to reply on time." (WebCT transcript)

Finally, a small minority of respondents expressed a need to return to the discussions at a later time to finish reading of all their messages.

As some of the evidence for effectiveness is based on self-reporting by participants, whether real learning occurred is still an open question. Further analysis is underway to explore this issue.

Conclusions

We have drawn on findings from the study of a single synchronous online role play to suggest that it is possible to design and facilitate an effective online role play activity in which learners can engage with their roles. The process is helped by the use of familiar roles, opportunities for real-time discussion, and anonymity. Learners may further enhance their own performance and the engagement of others with their roles through the use of an appropriate voice, direct questions, and visualizations. Anonymity can help engender the feeling that participants are replying to the roles rather than to their peers and thus improve the freedom to speak in-role and the credibility of the setting. Barriers to role engagement include technical issues, unfamiliarity with the tools being used, lack of engagement from others in a group, and the rapid pace of a real-time activity.

Setting up and facilitating an anonymous role play experience requires the careful design of an appropriate context and effective strategies to preserve anonymity. For the Quality in Further Education role play, the anonymity was undone by many participants, and it may be worthwhile to consider improvements to the strategy used. The method of role allocation and background information provided about the roles may have also had an impact on engagement. In this case study, roles were distributed by the tutor, and it is clear that some participants were disappointed with their allocation. Whether learners would be more motivated to engage fully in their roles and interact with other participants if given a free choice, or if provided with additional briefing information, requires further investigation.

Based on our exploration of our distance learners' experiences of the Quality in Further Education role play, we agree with Riddle (2009) and suggest that the key feature of an online role play is that it should provide an opportunity for performance of roles and for in-role interaction rather than an authentic, realistic, or credible learning environment. While recognizing that our study is based on a single, time-limited case study, and that a novelty effect could have influenced learners' experiences, we feel our findings show that online role play can offer a setting for distance learners where roles can be performed effectively

and in which in-role interaction can take place. Further work to allow comparison with learners' experiences in other anonymous online role play settings would be useful to help validate these findings. In particular it would be interesting to explore distance learners' experiences in anonymous immersive environments such as those provided by virtual worlds.

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Athabasca University

IRR ODL

Assessment of Learner Acceptance and Satisfaction with Video-Based Instructional Materials for Teaching Practical Skills at a Distance

Francis Donkor
University of Education, Winneba, Ghana

Abstract

As video-based instructional materials become available to distance learners to learn practical skills at a distance, it is important to assess the instructional effectiveness of these materials and to understand how students respond to them. This paper is the second part of a larger exploratory study that assessed the instructional effectiveness of video-based instructional materials for teaching distance learners practical skills in block-laying and concreting and how learners respond to these instructional materials. Specifically, this paper aims to assess learners' acceptance and satisfaction with the materials. It also aims to determine whether levels of learner satisfaction and acceptance differ according to study centres. Data were collected from 71 respondents at three study centres using a self-completion questionnaire comprising 17 Likert-type items. The data were analyzed using descriptive statistics, ANOVA, and Scheffe's post hoc test at a 0.05 level of significance. Learners appeared positive about their learning experiences with the use of video-based instructional materials to learn practical skills at a distance as they rated highly all the items assessing their acceptance and satisfaction. Results of item-by-item ANOVA regarding learner acceptance indicated that the respondents, categorized according to study centres, exhibited similar levels of acceptance for nine of the ten items. For learner satisfaction, there were no statistically significant differences for six of the seven items. Thus, learners of different study centres exhibited about the same level of acceptance and satisfaction.

Keywords: Block-laying and concreting; distance learning; learner acceptance; learner satisfaction; technical and vocational education and training (TVET); technology acceptance model (TAM); video-based instructional materials

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Introduction

The teaching of practical skills via distance learning poses a challenge, especially for technical and vocational education and training (TVET) disciplines. Teaching practical skills, whether within a conventional educational institution or via distance learning, requires the use of precise instructions to enable learners to follow the process and thereafter repeat the skill (Hampton, 2002). Traditionally, print-based instructional materials have been used to teach practical lessons at a distance. This is buttressed by Hampton, who indicates that "for open and distance learners, the most frequently used method for teaching practical skills is print-based illustrations of step-by-step procedures" (p. 84). However, the use of print-based materials has its shortcomings, and therefore, in recent times, alternatives such as video-based instructional materials (VBIMs) have been sought (Donkor, 2010).

The use of video in the delivery of practical lessons has some advantages that are acknowledged in the literature. One such advantage, advanced by Mishra (2001), is that video is useful in showing practical and real-life activities. Mishra further argues that video can be used to capture hazardous and costly experiments for presentation and for repeated use. For the teaching of practical skills to open and distance learners, Hampton (2002) sees video as "a successful medium because it links the audio and the visual together to provide a multisensory experience for the learner" (p. 85). Hampton further observes that video makes it possible for the learner to play, replay, pause, and rewind to specific sections of the lesson, and further contends that "because practice and rehearsal is so important in developing competency, video is particularly well placed" (p. 85). Zhang, Zhou, Briggs, and Nunamaker (2006) hold the view that "video allows students to view actual objects and realistic scenes, to see sequences in motion, and to listen to narration" (p. 17). Though video resources are expensive to produce, Tooth (2000) admits that they are very useful where practical demonstrations of skills are required. From an economic perspective, Jung (2005) sees the merit of using video resources in the cost savings expected from reuse.

A literature search for the present study did not find empirical studies that investigated users' acceptance and satisfaction with video-based materials in the delivery of practical lessons at a distance. However, Wetzel, Radtke, and Stern (cited in Zhang et al., 2006) have indicated that research suggests that instructional video increases learners' interest in the subject, as well as motivation to learn. Also, it has been reported that students find video materials attractive, leading to higher degrees of satisfaction (Kearney & Treagust, 2001; Piotrow, Khan, Lozare, & Khan, 2000). Similarly, Zhang et al. (2006) have reported positive effects of interactive video on both learning outcomes and learner satisfaction in e-learning.

In spite of the aforementioned strengths, not much is encountered in the literature regarding empirically documented works about the use of video to teach practical skills at a distance, especially for TVET disciplines. In Ghana, the President's Special Initiative on Distance Learning is using video-based instructional materials to teach practical skills, including in the delivery of a block-laying and concreting course via distance learning. Don-

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kor (2010) has compared the instructional effectiveness of the video-based instructional materials and the traditional print-based instructional materials. He found the video-based instructional materials to be pedagogically superior to the print-based instructional materials for the teaching of practical skills at a distance. However, there has not been any empirical study to assess user acceptance and satisfaction with the video-based instructional materials. This part of the larger exploratory study focuses on learner acceptance and satisfaction with the video-based instructional materials used in teaching practical block-laying and concreting lessons.

User acceptance and satisfaction with video-based instructional materials for teaching practical skills at a distance has not received much attention in the literature. Empirical studies are therefore required to answer such questions as "how acceptable are video-based instructional materials to learners?" and "how satisfied are learners with video-based instructional materials?" As video-based instructional materials become available to distance learners to learn practical skills at a distance, it is important to assess the instructional effectiveness of these materials. It is equally important to understand how students respond to them. In view of the latter, this paper addresses itself to the following three objectives:

1. to assess students' acceptance of video-based instructional materials;

2. to assess students' satisfaction with video-based instructional materials; and

3. to determine whether levels of learner satisfaction and acceptance differ according to study centres.

Instructional Materials of the President's Special Initiative on

Distance Learning

The Ghana government established the President's Special Initiative on Distance Learning (PSI-DL) in April 2002 to coordinate and implement alternate models of education in the country (for additional information, see Donkor, 2010). In September 2007, PSI-DL started open schooling at the pre-tertiary level with the piloting of the teaching and learning by distance of two courses, Block-Laying and Concreting and Catering, using study centres in six existing TVET institutions and in five prisons in Ghana. Five of the institutions offer both courses, whilst the sixth offers only Catering.

Learners are provided with self-instructional materials to study at home on their own, and they attend tutorial sessions fortnightly at the study centres. The learning of theory is achieved through print-based instructional materials; practical skills acquisition is achieved through either print-based illustrations of step-by-step procedures or video-based practical lessons that learners access using computers or VCD players at home or at the study centres. Practical skills acquisition is consolidated through hands-on activities in workshops

and laboratories during face-to-face sessions at the study centres under the supervision of an instructor/tutor.

For the production of the video-based practical lessons, the topics and sub-topics are first logically sequenced, written by experienced practicing teachers, and thoroughly reviewed by experts. The lessons, thus written, are converted into production scripts, shot, edited, and dubbed onto VCDs. Students of conventional TVET institutions are used for the shooting of the lessons, which are facilitated by teachers well experienced in the teaching of practical skills. The shooting, editing, and dubbing onto VCDs are carefully done by a team of experts to guarantee quality instructional materials regarding content, text, images, and sound. The result is that the final material, when viewed, has clearly visible images, comprehensible and easy-to-read text with bold, clear fonts, good contrast with the background, and a clean, uncluttered screen.

The Theoretical Framework for Assessing Learner Acceptance

of Video-Based Instructional Materials

On the basis of Dillon's (2001) definition of "user acceptance" in relation to information technology, learner acceptance is defined for the purposes of this study as the demonstrable willingness within a user of instructional video technology (VCD type) to employ it to learn practical skills. The conceptual foundation of the learner acceptance aspect of the present study was based on the technology acceptance model (TAM). According to Turner, Kitchenham, Brereton, Charters, and Budgen (2010), TAM was proposed by Fred Davis in 1989 as a means of predicting technology usage. TAM postulates that perceived ease of use and perceived usefulness of technology are predictors of user attitude toward using the technology, subsequent behavioural intentions, and actual usage (Davis, 1993; Masrom, 2007). The TAM employed for this study is shown in Figure 1.
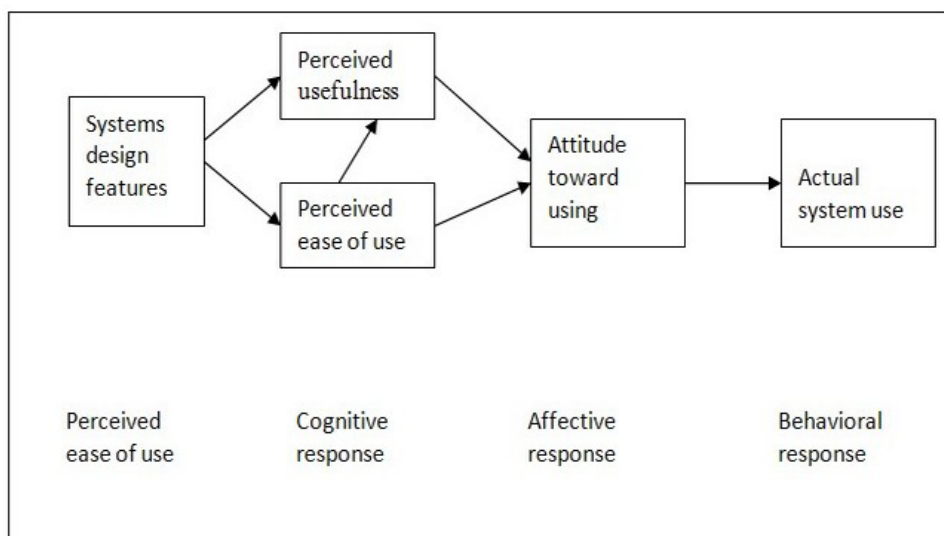

Figure 1. Original Technology Acceptance Model (Davis, 1993, p. 476).

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Masrom (2007) describes *perceived usefulness* as the degree to which the user believes that using the technology will improve his or her work performance, while *perceived ease of use* "refers to how effortless he or she perceives using the technology will be" (p. 3). According to Masrom, both perceived usefulness and perceived ease of use are considered distinct factors influencing the user's attitude toward using the technology, though perceived ease of use is also hypothesized to influence perceived usefulness and attitude toward using the technology. Finally, such attitude toward using the technology determines the behavioural intention to use that technology.

Methodology

Research Design

The study employed a cross-sectional descriptive survey with a researcher-designed questionnaire for data collection. Since the study sought to assess the instructional materials of an ongoing programme, the survey research method was deemed appropriate. In the view of Osuala (1993), the survey method is appropriate for conducting studies into ongoing processes. The survey design is also the most preferred in situations where the data to be collected are about self-reported beliefs or behaviours (Neuman, 2000). The choice of the survey method was also informed by the views of Johnson and Christensen (2008), who have indicated that such data can be collected in a relatively short period of time.

Population and Sample

The population comprised all 151 learners who registered during the 2007/2008 academic year at the five study centres (institutions) to study Block-Laying and Concreting via distance learning (note that the sixth institution offers only Catering). They were all males. Anecdotal evidence suggests that this is consistent with male dominance in Block-Laying and Concreting in the formal, classroom-based school system. The study sample, as also reported in Donkor (2010), consisted of all of the 73 learners at three study centres purposely drawn from three zonal divisions in Ghana, namely Ramseyer Technical Vocational Institute and Technical Institute, Kumasi for the Middle Zone ($n = 15$), Bolgatanga Technical Institute for the Northern Zone ($n = 25$), and Takoradi Technical Institute for the Southern Zone ($n = 33$).

In addition to the assessment of learner acceptance and satisfaction, the larger study of which this paper is part also assessed the instructional effectiveness of the video-based instructional materials for teaching practical lessons (see Donkor, 2010). The latter aspect of the study involved a performance test to assess the practical skills acquired by students. To have involved the entire population ($N = 151$) in the performance test would have been extremely expensive, impractical, and time-consuming, and would have also required the services of many research assistants. The larger study also aimed to assess the instructional effectiveness of the video-based instuctional materials on one hand and the acceptance of and satisfaction with the materials on the other hand. Thus, the researcher decided to use students ($n = 73$) from three of the five study centres that were involved in the first part of

the larger study.

Instruments

A self-completion questionnaire was used for the study. Questionnaires are easy to administer, user-friendly, and fast to score. Therefore, it takes relatively little time for the respondents and researchers to complete and score the questionnaires. Additionally, similar user-acceptance studies have used researcher-designed self-completion questionnaires for data collection (King & He, 2006; Legris, Ingham, & Collerette, 2003; Schepers & Wetzels, 2007; Turner et al., 2010).

A 17-item questionnaire relating to learner acceptance (Learner Acceptance Scale) of and satisfaction (Learner Satisfaction Scale) with video-based instructional materials was used for the study. The respondents were required to indicate their agreement or disagreement with the questionnaire items on a four-point Likert-type scale. If the traditional five-point scale is used, respondents have the tendency to select responses in the centre of the scale (Anderson, 1985; Casley & Kumar, 1988; Downie, 1967). The responses for the four-point scale were: strongly agree (4), agree (3), disagree (2), and strongly disagree (1).

Ten items based on the technology acceptance model (TAM) were used to assess learner acceptance of the video-based instructional materials. As indicated above, TAM serves as a means of predicting technology usage. A review of literature covering studies of TAM revealed that 10 items based on TAM are commonly used in "user acceptance" studies where the specific names of the technologies are used to replace "the technology" in specific questionnaires (King & He, 2006; Legris et al., 2003; Schepers & Wetzels, 2007; Turner et al., 2010). These 10 commonly used items were modified for the current study to make them relevant and fit the specific context of the video-based instructional materials. Among the 10 items, four each related to "perceived usefulness" and "perceived ease of use," while one item each covered "behavioural intention to use" and "actual usage." The 10 items of the Learner Acceptance Scale used for the present study and the corresponding sub-scales appear in Table 1.

To measure learner satisfaction with the video-based instructional materials, seven items were used. They covered overall (global) satisfaction, effectiveness of the materials, degree of enjoyment using the materials, and learner resolve to recommend the materials to peers. Apart from the overall (global) satisfaction item, all the items were adapted from those used by the Canarie Learning Program (2004) in evaluating the Virtual Veterinary Medicine Learning Community e-learning modules introduced into the training of Doctor of Veterinary Medicine students across Canada. The seven items of the Learner Satisfaction Scale used for this study appear in Table 3.

In December, 2009, the researcher conducted a pilot study meant to ensure the validity and reliability of the questionnaire and to identify items that should be revised. The pilot study involved the administration of the questionnaire to a sample of 20 randomly selected learners from one of the study centres that constituted the population but was not selected for the study. The pilot study sample size of 20 was based on the observation of Borg and

Gall (1983) that for a pilot study, it is rarely necessary to include more than 20 subjects. Participants of the pilot study were asked to complete the instrument and to provide comments or suggestions for revising any ambiguous items. The final instrument for the study was produced after analysis of the pilot data and subsequent revisions in the wording of a few items.

Cronbach's alpha reliability test for the Learner Satisfaction Scale yielded a value of 0.88. For the Learner Acceptance Scale, Cronbach's alpha reliability test for the sub-scales yielded the following values: Perceived Usefulness – 0.89; Perceived Ease of Use – 0.92; Behavioural Intention to Use – 0.85; and Actual Usage – 0.88. Against the background of the observation by Johnson and Christensen (2008, p. 149) that "a popular rule of thumb is that the size of coefficient alpha should generally be, at a minimum, greater or equal to .70 for research purposes," these values of reliability indicate good internal consistency and instrument reliability. The high alpha values for the scales are consistent with previous findings and are as expected since "these scales have been validated and high reliability reported for each" (Fusilier & Durlabhji, 2005, p. 237). The high reliability values also confirm the earlier observation of Davis (1995), the architect of TAM, that the instrument has been used extensively and has been empirically validated by several researchers investigating issues in the area of user acceptance and that "the reliability (Cronbach alpha) in most cases has been in excess of 0.9..." (p. 730).

Data Collection Procedures

The data were collected in January 2010, over three days, with a day at each of the three selected study centres. At each centre, the researcher personally administered the questionnaires to the respondents who were attending scheduled face-to-face sessions. As and when the questionnaires were completed and handed in, they were scrutinised to ensure that the respondents had properly completed them. A total of 71 out of the 73 selected distance learners took part in the study, representing an overall response rate of 97.3%. This included a 100% response rate from Ramseyer Technical Vocational Institute ($n = 15$) and Bolgatanga Technical Institute ($n = 25$). For Takoradi Technical Institute, 31 of the 33 registered learners participated in the study, representing a 93.9% response rate for the study centre.

Method of Data Analysis

The raw data were analysed using the Statistical Package for the Social Sciences (SPSS). First, descriptive statistics such as percentages, means, and standard deviations were used to analyse the data collected. The computed mean rating for each item was compared with the theoretical mean rating (assuming normal distribution of responses) of 2.50 to determine whether respondents agreed with the statements. Any computed mean of an item exceeding 2.50 indicated expression of agreement with the statement, whilst means below 2.50 indicated expression of disagreement with the statement.

An item-by-item analysis of variance (ANOVA) at a 0.05 level of significance was run to determine whether there were any statistically significant differences in the ratings of re-

spondents categorized according to study centres. Where significant differences were established, Scheffe's post hoc test was used to make pairwise comparisons of the means to determine differences in the ratings. ANOVA assumes that the data are normally distributed and that there is homogeneity of variances. Kinnear and Gray (1992) strongly advise for the prior verification of the homogeneity assumption and further suggest the use of non-parametric tests when there is marked heterogeneity of variances. Owing to the disparity in the sample sizes of the three sub-groups, the ANOVA was preceded by a test of homogeneity of variances to verify the homogeneity assumption.

Results and Discussion

The research findings are presented in four sections according to the objectives that guided the study. The sections are as follows:

1. learner acceptance of video-based instructional materials;

2. comparison of learners' ratings of acceptance of video-based instructional materials according to study centres;

3. learner satisfaction with video-based instructional materials; and

4. comparison of learners' ratings of satisfaction with video-based instructional materials according to study centres.

Learner Acceptance of Video-Based Instructional Materials

The mean rating for each of the 10 learner acceptance items as rated by the respondents and the resultant mean rating for all the items were computed and compared with the theoretical mean rating (assuming normal distribution of responses) of 2.50. This was to determine whether students responded positively to the video-based instructional materials (VBIMs). The computed means and the corresponding standard deviations appear in Table 1.

The results that appear in Table 1 indicate that all the items had mean ratings that far exceeded the theoretical mean of 2.50. Also, the resultant mean of 3.425 (SD = 0.546) for all the items substantially exceeded the theoretical mean. As indicated in Table 1, the item "I find the VBIMs useful in acquiring practical skills in Block-Laying and Concreting" (Item #4) had the least mean rating of 3.310 (SD = 0.523). Though it had the least mean rating, the value of 3.310 substantially exceeded the theoretical mean of 2.50. The highest mean rating of 3.592 (SD = 0.495) related to the item "I find the VBIMs easy to use" (Item #8). The reported high ease of use could be due to the quality of the materials regarding content, text, images, and sound. Indeed, when viewed, the images appear good and visible; the texts are clearly visible and easy to read, as the fonts are bold and clear; there is good contrast with the background; and screens appear clean and uncluttered.

Thus, the results of the study showed that distant learners responded positively to the vid-

eo-based instructional materials and that the materials were well received. It is hoped that the expressed high levels of perceived usefulness, ease of use, intention to use, and actual usage of the video-based instructional materials in learning practical skills will greatly enhance learners' motivation, interest, and practical skills acquisition.

Table 1

Descriptive Statistics of Learners' Ratings of Acceptance of Video-Based Instructional Materials

Element of acceptance of the video-based instructional materials (VBIMs)	*Mean rating*	*Standard deviation*
Perceived usefulness		
VBIMs improve my performance in doing practical work in Block-Laying and Concreting.	3.394	0.597
VBIMs improve my acquisition of practical skills in Block-Laying and Concreting.	3.465	0.530
VBIMs enhance my effectiveness in performing practical work in Block-Laying and Concreting.	3.366	0.638
I find the VBIMs useful in acquiring practical skills in Block-Laying and Concreting.	3.310	0.523
Perceived ease of use		
Operating the VBIMs is easy for me.	3.380	0.517
I find it easy to get the VBIMs to learn practical lessons in Block-Laying and Concreting.	3.437	0.554
It was easy for me to become skillful in Block-Laying and Concreting with the use of the VBIMs.	3.507	0.504
I find the VBIMs easy to use.	3.592	0.495
Behavioural intention to use		
I intend to use the VBIMs regularly in learning practical lessons in Block-Laying and Concreting.	3.352	0.537
Actual usage		
I use the VBIMs regularly to learn practical lessons in Block-Laying and Concreting.	3.451	0.529
Resultant mean for all elements of acceptance of the video-based instructional materials	3.425	0.546

Comparison of Learners' Ratings of Acceptance of Video-Based Instructional Materials According to Study Centres

The mean rating for each of the 10 learner acceptance items as rated by the respondents was computed for each of the three study centres that participated in the study (Table 2). The mean ratings for the three sub-groups are high and appear quite close for many of the items. This notwithstanding, it was deemed appropriate to determine whether the observed differences were statistically significant, using one-way analysis of variance (ANOVA) at the 0.05 level of significance. Due to the apparent disparity in the sample sizes of the three sub-groups ($n = 15$, $n = 25$, $n = 31$), the ANOVA was preceded by a test of homogeneity of variances. The results indicated that all the items met the requirements that the three sub-groups were from a homogeneous population.

The results of the item-by-item ANOVA are reported as F-values and p-values in Table 2 (last two columns respectively). With regard to nine of the items, there were no statistically significant differences in respondents' ratings of learner acceptance for the three study centres ($p\text{-}value > 0.05$). This indicates that the three sub-groups exhibited about the same levels of agreement with nine of the statements that sought to measure respondents' acceptance of the video-based instructional materials. From the ratings of the respondents regarding the nine items, there was a high degree of uniformity in the level of learners' acceptance of the use of the video-based instructional materials to teach them practical skills in block-laying and concreting. Thus, learners at the three study centres were unanimous in rating highly their acceptance of the video-based instructional materials.

Table 2

Results of ANOVA for Ratings of Items of the Learner Acceptance Scale Categorized according to Study Centres

Elements of acceptance of video-based instructional materials (VBIMs)	Ratings of learners of Middle Zone (n = 15)		Ratings of learners of Northern Zone (n = 25)		Ratings of learners of Southern Zone (n = 31)		F -value	p-value
	Mean	SD	Mean	SD	Mean	SD		
VBIMs improve my performance in doing practical work in Block-Laying and Concreting.	3.333	0.488	3.280	0.614	3.516	0.625	1.1880	0.311
VBIMs improve my acquisition of practical skills in Block-Laying and Concreting.	3.533	0.516	3.320	0.476	3.548	0.568	1.463	0.239
VBIMs enhance my effectiveness in performing practical work in Block-Laying and Concreting.	3.400	0.632	3.200	0.646	3.484	0.626	1.414	0.250
I find the VBIMs useful in acquiring practical skills in Block-Laying and Concreting.	3.267	0.458	3.240	0.523	3.387	0.558	0.604	0.549
Operating the VBIMs is easy for me.	3.333	0.488	3.320	0.476	3.452	0.568	0.519	0.597
I find it easy to get the VBIMs to learn practical lessons in Block-Laying and Concreting.	3.267	0.594	3.240	0.523	3.677	0.475	5.951*	0.004
It was easy for me to become skillful in Block-Laying and Concreting with the use of the VBIMs.	3.533	0.516	3.400	0.500	3.581	0.502	0.914	0.406
I find the VBIMs easy to use.	3.600	0.507	3.52	0.510	3.645	0.486	0.438	0.647
I intend to use the VBIMs regularly in learning practical lessons in Block-Laying and Concreting.	3.333	0.723	3.280	0.458	3.419	0.502	0.470	0.627
I use the VBIMs regularly to learn practical lessons in Block-Laying and Concreting.	3.400	0.507	3.440	0.507	3.484	0.570	0.132	0.877

*Statistically significant at .05 level, df = 2 for numerator and 68 for denominator (computed F value > $F_{0.05 (2, 68)}$ = 3.132); $p\text{-}value$ = 0.004 < 0.0

The respondents, however, differed significantly in their rating of the item "I find it easy to get the VBIMs to learn practical lessons in Block-Laying and Concreting" (F = 5.951, which exceeds F (2, 68) = 3.132 required for significance at the 0.05 level; *p-value* = 0.004). Thus, the study centre appeared to be a determinant of the accessibility of the video-based instructional materials. To determine which study centres significantly differed, Scheffe's post hoc test (at 0.05 level of significance) was used to make pairwise comparisons of the mean ratings of the three sub-groups. The results indicated that the ratings of learners from the Southern Zone (represented by Takoradi Technical Institute) were significantly higher than the ratings of respondents from both the Middle and Northern Zones (represented by Ramseyer Technical Vocational Institute and Bolgatanga Technical Institute respectively). Thus, learners from the Southern Zone appeared to have easier access to the video lessons than their counterparts from the Middle and Northern Zones. Indeed, it has been observed that some students from the Southern Zone have access to VCD players and computers at home. Additionally, some of them have duplicated the video lessons. For these reasons, students of the Southern Zone appear to have easier access to the lessons than their counterparts from the other two zones, who can mostly access the lessons only at the study centres. A scheme needs to be put in place to give the learners of the Middle and Northern Zones equally easy access to the materials.

Learner Satisfaction with Video-Based Instructional Materials

The mean rating for each of the seven learner satisfaction items as rated by the respondents and the resultant mean rating for all the items were computed. These were then compared with the theoretical mean rating (assuming normal distribution of responses) of 2.50 to determine whether students were satisfied with the video-based instructional materials (VBIMs). The results that appear in Table 3 indicate that all the items had mean ratings that far exceeded the theoretical mean. Also, the resultant mean of 3.465 (*SD* = 0.538) for all the items substantially exceeded the theoretical mean of 2.50. Thus, students rated highly the learner satisfaction items. As indicated in Table 3, the item "I am satisfied with my learning from the VBIMs" (Item #7) had the highest mean rating of 3.577 (*SD* = 0.525). The lowest mean rating of 3.352 (*SD* = 0.563) related to the item "The video lessons make me spend more time studying to acquire practical skills" (Item #6). The results of the study showed that students are highly satisfied with the video-based instructional materials.

Table 3

Descriptive Statistics of Learners' Rating of Satisfaction with Video-Based Instructional Materials

Element of satisfaction with the video-based instructional materials (VBIMs)	*Mean rating*	*Standard deviation*
I find the video lessons enjoyable.	3.507	0.504
The VBIMs have contributed greatly to my acquisition of relevant skills in Block-Laying and Concreting.	3.479	0.557
I find the video lessons to be effective in meeting the learning objectives.	3.549	0.529
I would describe the video lessons as being highly interesting.	3.423	0.525
I would recommend use of the video lessons to my colleagues.	3.366	0.541
The video lessons make me spend more time studying to acquire practical skills.	3.352	0.563
I am satisfied with my learning from the VBIMs.	3.577	0.525
Resultant mean for all elements of satisfaction with the video-based instructional materials	3.465	0.538

Overall (global) satisfaction with the use of the VBIMs for learning practical skills was equally very high ($\bar{x}$ = 3.577, *SD* = 0.525). This suggests that learners were overwhelmingly positive about their satisfaction levels with the VBIMs. The high overall satisfaction is an expression of high motivation for the use of the VBIMs as the learners found them enjoyable, interesting, and would recommend them to their colleagues for use. The students also found the materials to be relevant and effective. It is encouraging to see that the learners in the present study found the video lessons enjoyable as "an enjoyable learning scenario is a necessity to effective instruction" (Ghee & Heng, 2008, p. 686). It is equally encouraging that the learners found the materials to be relevant and effective. This is because relevant and effective materials enable students to acquire specific skills, knowledge, and attitudes (Dick & Reiser, 1989, as cited in Ghee & Heng, 2008). Learners' expression of high satisfaction with the VBIMs should also be a source of satisfaction to the President's Special Initiative on Distance Learning, which runs the Block-Laying and Concreting programme via distance learning.

Comparison of Learners' Ratings of Satisfaction with Video-Based Instructional Materials According to Study Centres

The mean rating for each of the seven learner satisfaction items as rated by the respondents was computed for each of the three study centres that participated in the study (Table 4). The mean ratings for the three sub-groups were substantially higher than the theoretical mean of 2.50 and appeared quite close for all the items. However, it was deemed appropriate to determine whether the differences in the means were statistically significant using one-way analysis of variance (ANOVA) at the 0.05 level of significance. Due to the apparent

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disparity in the sample sizes of the three sub-groups ($n = 15$, $n = 25$, $n = 31$), the ANOVA was preceded by a test of homogeneity of variances. The results indicated that all the items met the requirements that the three sub-groups were from a homogeneous population.

The results of the item-by-item ANOVA are reported as F-values and p-values in Table 4 (last two columns respectively). The results show that there was uniform agreement in the responses for six out of the seven items that measured learner satisfaction as there were no statistically significant differences in the ratings of the respondents categorized according to study centres. The ratings of the respondents regarding the six items showed a high degree of similarity in the level of satisfaction with the use of the video-based instructional materials for practical skills acquisition in block-laying and concreting. Thus, learners at the three study centres were unanimous in rating highly their satisfaction with the video-based instructional materials.

The respondents, however, differed significantly in their rating of the item "The video lessons have contributed greatly to my acquisition of relevant skills in Block-Laying and Concreting" ($F = 4.727$, which exceeds $F (2, 68) = 3.132$ required for significance at the 0.05 level). To determine which study centres significantly differed, Scheffe's post hoc test (at 0.05 level of significance) was used to make pairwise comparisons of the mean ratings of the three sub-groups. The results indicated that the ratings of learners from the Southern Zone (represented by Takoradi Technical Institute) were significantly higher than the ratings of respondents from the Northern Zone (represented by Bolgatanga Technical Institute). A contributory factor could perhaps be accessibility to the materials. As depicted in the findings earlier reported, learners from the Southern Zone appeared to have easier access to the materials compared to learners from the other zones. With the increased access to the video-based instructional materials, the learners from the Southern Zone were likely to rate higher the contribution of the materials toward their acquisition of relevant skills in block-laying and concreting than those from the Northern Zone.

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Table 4

Results of ANOVA for Ratings of Items of the Learner Satisfaction Scale Categorized according to Study Centres

Elements of satisfaction with video-based instructional materials	Ratings of learners of Middle Zone (n = 15)		Ratings of learners of Northern Zone (n = 25)		Ratings of learners of Southern Zone (n = 31)		*F-value*	*p-value*
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*		
I consider the video lessons to be enjoyable.	3.533	0.516	3.400	0.500	3.581	0.502	0.914	0.406
The video lessons have contributed greatly to my acquisition of relevant skills in Block-Laying and Concreting.	3.467	0.516	3.240	0.597	3.677	0.475	4.727*	0.012
I consider the video lessons to be effective in meeting the learning objectives.	3.600	0.507	3.440	0.507	3.613	0.558	0.823	0.443
I would describe the video lessons as being highly interesting.	3.400	0.632	3.320	0.476	3.516	0.508	0.981	0.380
I would recommend use of the video lessons to my colleagues.	3.267	0.594	3.320	0.557	3.452	0.506	0.726	0.488
The video lessons make me spend more time studying to acquire practical skills.	3.333	0.617	3.280	0.614	3.419	0.502	0.427	0.654
I am satisfied with my learning from the video lessons.	3.600	0.632	3.48	0.510	3.645	0.486	0.695	0.503

*Statistically significant at .05 level, df = 2 for numerator and 68 for denominator (computed F value > $F_{0.05 (2, 68)}$ = 3.132); p-value = 0.012 < 0.05

Conclusion and Implications for Practice

This study is one of the few attempts to investigate learners' acceptance of and satisfaction with video lessons used to teach practical skills at a distance. Lack of user acceptance and satisfaction could be an impediment to the successful adoption of any new technology or product, including the use of video-based instructional materials to teach practical lessons at a distance. Fortunately, the results of this study showed high acceptance and satisfaction of the distance learners with the use of the video-based instructional materials to teach them practical skills. The learners expressed high perceived usefulness, ease of use, and intention to use the video-based instructional materials in learning practical skills in block-laying and concreting. The learners also found the materials relevant, effective, enjoyable, and interesting, and would recommend them to their fellow students for use. The expressed high acceptance of and satisfaction with the video-based instructional materials was, to a large extent, also uniform among the respondents of the three study centres covered by the study. Thus, irrespective of location, the learners generally appeared positive about their experiences in the use of the video lessons to learn practical skills at a distance.

The study has demonstrated that the use of video-based instructional materials to teach practical skills at a distance appears promising. The President's Special Initiative on Distance Learning (PSI-DL), which runs the programme, will undoubtedly feel encouraged by the findings and can better justify its activities when it devotes significant organizational resources to video-based instructional materials used to teach practical skills at a distance. Although the findings are encouraging, PSI-DL needs to reflect on them, identify the possible causes of the high learner acceptance and satisfaction, and thereafter, institute measures to maintain the identified success factors so that the expressed high learner acceptance and satisfaction do not slip.

The primary goal of using the video-based instructional materials is to support and enhance the learning of practical skills at a distance. This goal cannot be achieved if learners are not satisfied with the materials and do not accept to use them. The findings provide distance education practitioners (including tutors, instructional designers, academic institutions, and open schools) important considerations regarding the design and subsequent use of video lessons to teach practical skills at a distance. The usefulness and ease of use of the instructional materials should be of prime concern if the learners are to be satisfied with them. Practitioners must strive to produce materials for the learning of practical skills at a distance that learners find useful, easy to use, and enjoyable.

In this study, the measure of actual usage of the video-based instructional materials by learners was subjective and based on the opinion of the respondents through a self-completion questionnaire. It is recommended that future studies should combine the use of both objective and subjective approaches to measure actual usage.

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Athabasca University

Learner Analysis Framework for Globalized E-Learning: A Case Study

Mamta Saxena
Southern New Hampshire University, USA

Abstract

The shift to technology-mediated modes of instructional delivery and increased global connectivity has led to a rise in globalized e-learning programs. Educational institutions face multiple challenges as they seek to design effective, engaging, and culturally competent instruction for an increasingly diverse learner population. The purpose of this study was to explore strategies for expanding learner analysis within the instructional design process to better address cultural influences on learning. A case study approach leveraged the experience of practicing instructional designers to build a framework for culturally competent learner analysis.

The study discussed the related challenges and recommended strategies to improve the effectiveness of cross-cultural learner analysis. Based on the findings, a framework for conducting cross-cultural learner analysis to guide the cultural analysis of diverse learners was proposed. The study identified the most critical factors in improving cross-cultural learner analysis as the judicious use of existing research on cross-cultural theories and joint deliberation on the part of all the participants from the management to the learners. Several strategies for guiding and improving the cultural inquiry process were summarized. Barriers and solutions for the requirements are also discussed.

Keywords: Distance learning; learner analysis; cultural analysis; globalized e-learning; learner analysis frameworks; instructional design

Introduction to the Study

Learner analysis is a critical aspect of instructional design and is characterized as an iterative process that informs vital instructional design decisions from front-end analysis to evaluation (Edmundson, 2007; Morrison, Ross, & Kemp, 2004; Rogers, Graham, & Mayes, 2007). At this time, there is a limited body of research addressing the role of cultural background within the process of learner analysis, and unfortunately traditional instructional design processes are inadequate in informing the design of cross-cultural instruction (Henderson, 1996; McLoughlin, 1999, Rogers et al., 2007). Effective design for global distance learning is in need of further research (Gunawardena, Wilson, & Nolla, 2003; Mason, 2003). The natural path to achieving this goal is through a re-examination of existing models and strategies of learner analysis via the lived experience of instructional designers.

The purpose of this study was to investigate the variability in existing frameworks of cultural analysis within the instructional design practice as described and practiced by experienced instructional designers from differing cultural backgrounds working in a global distance learning setting. The ultimate goal of the study was to propose a framework for improving the effectiveness of culturally competent learner analysis. This goal was realized through a qualitative study that was guided by the following research questions:

1. To what extent do instructional designers conduct cultural inquiry during their analysis of learner characteristics?

2. In what ways are instructional designers currently considering and addressing cultural influences in their design process?

3. How do instructional designers characterize the role of learner analysis in creating culturally appropriate distance learning content?

4. How do designers define the elements of cultural analysis critical for culturally competent design?

Brief Review of the Literature

From an educational perspective, culture plays a crucial role in pedagogical values, learning styles, and cognitive processing (Smith & Ayers, 2006). When teaching and learning take place within a single cultural context, the unity of experience and cultural background is generally unobtrusive. When instruction begins to reach individuals of multiple cultural backgrounds, however, there is a risk of creating barriers based on the inability to address or mediate differences in educational values and cultural beliefs embedded in the content and multimedia. These differences can include perceptions about the roles and responsibilities of instructors and learners, prevailing styles of teaching and learning, and nuances of language and semantics (Chen, Mashadi, Ang, & Harkrider, 1999; Henderson, 1996; McLoughlin, 1999; Rogers et al., 2007; Smith & Ayers, 2006).

While such challenges would be present in any classroom that combines individuals from varying cultural backgrounds, the additional challenges presented by distance learning present an extra layer. Chen, Mashadi, Ang, and Harkrider (1999) claimed that even if one overcomes the instructional design-related issues of distance learning, the value of learning mainly depends on the learner's experiences of cultures and technology. Instructional designers must factor in these differences when designing instruction for a diverse learner population to reduce the impact of cultural barriers on effective learning. In addition, instructional designers have to be cognizant of their own predispositions based on worldviews.

Based on some of the expert viewpoints in the field of instructional design (Bentley, Tinney, & Chia, 2005; Henderson, 1996; Henderson, 2007; McLoughlin, 1999; Rogers et al., 2007), a culturally competent design can be defined as one that strives to effectively mediate culture in order to fulfill the needs and expectations of the majority of learners. Such a design must be built upon an eclectic pedagogic paradigm and shared epistemological systems to create a distance learning environment that (a) is sensitive to the cultural differences of learners and factors in the cultural differentials of language, technology, cognitive processing, cultural context, and motivational factors; (b) makes the educational values of the participants (both learners and designers) explicit upfront; and (c) offers flexibility in regard to the pedagogies, resources, and delivery strategies and provides additional support based on learner needs.

Such a design aims to create a user-centered learning environment and is based on well-defined learner needs and expectations. One may argue against the possibility of a true culturally competent design considering the myriad of cultures and subcultures that exist, the protean nature of those cultures, and the inherent challenges of technology-mediated instruction. Nevertheless, diligent market research, constantly emerging and evolving technologies, and shared accountability on the part of the designers, the learners, and the research community can assist in sorting, validating, and creating a repository of intercultural dimensions to create a framework for culturally competent design that can reach the majority of learners. The first step to achieving this goal is designing a framework for cultural competence within the context of distance learning, and this necessarily begins with expanding the current approach to learner analysis (Rogers et al., 2007).

Research Method

A multiple case study approach explored designers' views on cultural inquiry of distance learners and their perceptions about how specifically the data can be gathered and used for making design and delivery decisions for cross-cultural instruction. An in-depth analysis of multiple cases revealed the current practices among instructional designers in the pursuit of culturally competent design and their perceptions about current learner analysis strategies and about the learner information that is most valuable in incorporating cultural factors into design.

Participant Characteristics

The study involved eight instructional designers from varied educational and business backgrounds. Six respondents were from the United States, one was from the United Kingdom, and one was from India. The designers had wide-ranging experiences of cross-cultural design working for a variety of corporate training environments, such as healthcare, financial services, insurance, and corporate universities. Participants ranged from independent contractors and self-employed e-learning consultants to corporate designers of large international companies.

Cross-cultural design experience also varied in that some participants had extensive or exclusive experience designing and delivering training for learners from a multitude of nations and cultures, while the experience of others was limited to designing for learners from different cultures within a given country. All participants had five or more years of experience in design, including distance learning, and in-depth knowledge and familiarity with the needs assessment process.

Data Collection

Sixty-minute telephone interviews were conducted with each subject, and the interviews were recorded for transcription. A semi-structured interview format was used, based on the research questions that provided the focus for this study. Collection took place over a period of two months in 2009.

Data Analysis

Patterns within the responses made it possible to identify the following: prevailing themes that provided insight into current practices of cultural analysis, needs specified by instructional designers for more effective incorporation of culturally relevant components in the analysis process, and factors of influence with regard to culturally competent design. A multiple case study approach offered an opportunity to gather insights from within each case and across cases for replication and contrasting findings and is considered more compelling and robust than a single case study approach (Yin, 2003).

Data analysis and exploration of themes were based upon the textual and conceptual functionality of coding in Atlas.ti and the qualitative analysis methods for cross-case analysis proposed by Miles and Huberman (1994). The analysis included the following processes: (a) coding and within-case analysis; (b) cross-case exploration using partially ordered display tables; (c) cross-case explanation and prediction via conceptually ordered content-analytic summary tables, fragment causal networks, and narratives; and (d) meta-analysis of fragment causal networks. Trustworthiness and credibility of the findings were established by using member checking, thick descriptions, and peer debriefing.

A provisional start list of codes was developed, drawn from the conceptual framework, research questions, literature review, and key variables brought to the study. The a priori codes were based on Bogdan and Biklen's (1992) scheme of defining codes in the following ways: (a) setting or context, (b) definition or situation, (c) perspectives, (d) ways of thinking

about people and objects, (e) process, (f) activities, (g) events, (h) strategies, (i) relationships and social structure, and (j) methods. These codes were collapsed into first level codes and then into family codes. These code families served as constructs identified under the themes as follows: (a) definition, (b) process, (c) cultural accommodations, (d) perception, (e) challenges, and (f) strategies. Constructs provide order to the descriptive data as they are concepts that are derived from observed phenomena and can be used to explain those phenomena.

Findings Related to Cultural Analysis

Data analysis afforded insights into the current challenges associated with conducting cross-cultural learner analysis and revealed various strategies that designers are either currently using or believe would be effective. The outcomes of the data analysis in the meta-causal network identified the following needs:

1. define the role of cultural analysis,

2. reformulate approach and focus for cultural analysis,

3. redefine the role of the participants and the sponsors, and

4. reassess training and information needs.

Define the Role of Cultural Analysis

Each participant offered a different definition of culture with some commonalities. While some associated culture with the organizational culture that learners come from, others linked culture with nationality or ethnicity and language; still others interpreted cultural differences as defined by personal learning styles. The feedback from the participants helped create an extensive list of cultural variables critical for distance learning design, from language and technical adaptability to religion, cultural taboos, and etiquette, but also revealed the absence of any universally applicable definition of culture. The participants' perceptions of cross-cultural design revealed a strong sense of cultural inclusivity among designers and the desire to learn more about learners' cultural needs, but because each defined culture differently there was no common approach.

There appeared to be a lack of clarity on (a) how to precisely define culture and diversity in the teaching-learning context; (b) how to delineate the cultural variables that are critical to include during learner analysis; (c) how to determine the expectations of the participants, from the sponsors and the designers to the learners and the research community, as to how much of the cultural analysis is necessary to be able to create a culturally competent design; and (d) how to approach the cultural analysis process with no defined framework or model.

According to some of the participants, the awareness of the need to invest time and money in cultural analysis is absent among the key stakeholders: the sponsors. Even if the design-

ers and the management acknowledge the need, personal bias or ignorance may lead to a lack of acceptance or recognition of the cultural issues, and this might also contribute to resistance by sponsors and designers. For example, Case 5 explained,

> customers hire me to discover why training is not working in other cultures and when I tell them I do not know why they do not quite believe it and I am not sure how to get them past that hurdle. It must be an American thing that I must be doing everything right. (¶49)

The findings align with the conclusions drawn by many studies that divulged the natural embodiment of a pro-Western bias in distance learning (Chen et al., 1999; Henderson, 1996; McLoughlin, 1999a; Rogers et al., 2007; Smith & Ayers, 2006).

The findings from the cases affirm that there is often a lack of knowledge and awareness among the designer community about how to approach the process of cultural analysis. Therefore, there is a critical need for the instructional design community to clearly define the role of cultural analysis in the needs assessment of diverse learners for cross-cultural design, and this call to action is echoed by other researchers such as Henderson (1996), McLoughlin (1999a), and Rogers et al. (2007).

Reformulate the Approach and Focus for Cultural Analysis

Analysis of the construct related to the perceptions of designers about cross-cultural design and cross-cultural learner analysis revealed that the designers agreed with the need to address cultural issues. However, even though the designers had a strong desire to learn more about the cultural needs of learners, their current practice does not have a clearly defined approach and focus for such an analysis during the needs assessment process. Whether it be due to the time, budget, and resource constraints or because of bias and ignorance, the sponsors and the management are unable to precisely understand and support cultural analysis as delineated by the designers.

Redefine the Role of Participants

The designers reflected an understanding of the urgent need to gather critical cultural data on learners but noted that they were bound by organizational expectations and policies, personal bias, and a lack of knowledge on (a) how to approach the process, (b) what exactly to look for in cultural analysis, and (c) how to translate the information in cross-cultural design.

As well, the absence of direct input from the learners is of significant concern. The majority of the participants acknowledged that learner information is provided by the sponsors or clients or gathered via other sources with no direct learner input. Some of the designers, however, expressed a strong desire to include the learner in the process, either before or after delivery, to understand the learning gaps created due to cultural differences. Designer 5 asserted that even an otherwise thorough cultural analysis process is incomplete without learners' input. Hence, there is a need to redefine the role of learners as active participants

in the cultural analysis process, whether it is to gather new information or to validate the assumptions based on research information.

Reassess Training and Information Needs

Some of the participants expressed the need for a database or knowledge base on cultural variables or cultural profiles of learners, based on nationality or other criteria that impact learning, that could serve as a reference. The designers had a strong desire to learn about cultural needs, but they expressed the need for access to research-based information in an organized form, such as in a knowledge base related to cross-cultural design principles or cultural variables. The research community and professional organizations can help by disseminating research information efficiently and making it easily available for designers and learners.

Other participants articulated the idea of learning through training workshops, if not through extensive training, in cross-cultural design. Currently, there are no mandatory training or competency requirements for designers to be skilled in cross-cultural design or cultural analysis. Because there are no standards, the participants were not only ambivalent about what it means to be culturally competent but also intimidated by the idea of trying to address a myriad of cultures. Therefore, a readily available data source would assist in addressing some of the aforementioned concerns.

Also, the designers expressed the need for a framework or model for cross-cultural learner analysis with clearly outlined steps in the process for designers. Some of the participants pointed out the difficulty in having access to cultural expertise. Redefined training and information resources might bring a level of cultural expertise to the designers that would augment their existing repertoire of cross-cultural design skills.

The needs and requirements for competent cross-cultural design based on the data are illustrated in Figure 1. It is important to note both the individual elements within the framework and the relationships among the various parts. The intricacies of the framework reflect the intrinsically complex nature of cultural analysis and highlight the varied knowledge and skills designers require to make the practice a core element of their design approach.
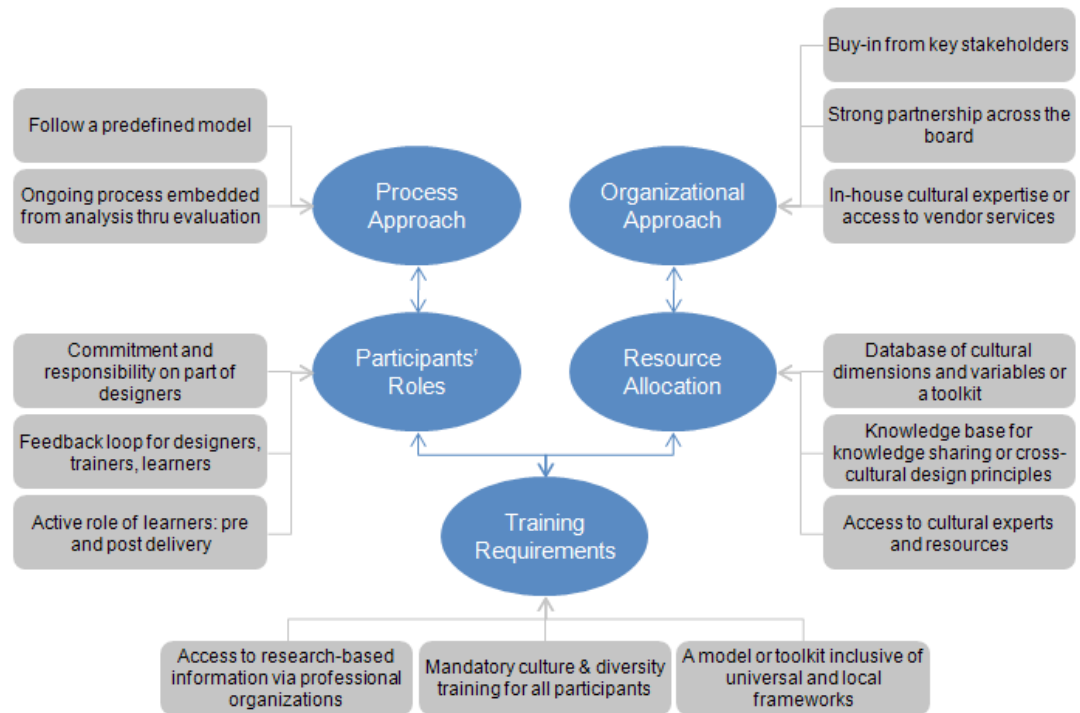
Figure 1. Needs and requirements for cross-cultural learner analysis.

Barriers, Solutions, and the Proposed Framework

The barriers and solutions identified by the designers fell into three categories: (a) organizational, (b) procedural, and (c) personal.

Organizational Barriers and Solutions

Organizational challenges faced by designers include difficulty in getting buy-in from key stakeholders, in obtaining ongoing support, and in accessing necessary resources. The proposed solutions for the aforementioned barriers include educating management, making a strong business case for cultural analysis, and establishing a strong partnership across the board. Designer 5 commented on the challenges, stating,

> I would say it is still probably mostly organizational because while I will often work with someone in the organization who understands the value in what we are doing and that it will save the company time or money or save a relationship, it is often not the highest level in the company: so they often do not get buy-in. (¶100)

One way of addressing this concern is through mandatory workshops or seminars for leaders and management about the significance of cultural analysis in providing effective, targeted training to global learners.

Another solution is to help business leaders and managers become more culturally intelligent themselves. Thomas and Inkson (2009) defined cultural intelligence (CQ) as

> being skilled and flexible about understanding a culture, learning more about it from your ongoing interactions with it, and gradually reshaping your thinking to be more sympathetic to the culture and developing your behavior to be more skilled and appropriate with others from the culture (p. 17).

They included three variables in CQ: knowledge, mindfulness, and skills about culture and cross-cultural competence in varying intercultural scenarios. It is anticipated that as personal cultural intelligence rises, so too does a positive disposition toward cultural analysis.

Additionally, it is important to make a business case for cultural analysis for the sponsors and clients. Designer 5 suggested presenting cultural analysis as a critical part of market analysis, while another designer recommended that it be embedded in the needs assessment process.

> When you are designing learning and you want it to be successful in another country or culture WHY would you NOT explore this aspect and not include as otherwise you are setting yourself to defeat for market loss, money loss. I say it is just part of market analysis. In that respect sometimes we get a few people who understand right from the beginning and they let us make those changes but that is really rare. (¶164)

If key stakeholders understand and appreciate the need for cultural analysis, organizations will have a clearly defined role for cultural analysis and it will become an essential part of the needs assessment. Designers will then have access to the resources they need to conduct an effective cultural analysis process that gathers critical cultural data on learners.

Procedural Barriers and Solutions

The procedural barriers in cross-cultural learner analysis include an unclear approach and focus, time and cost limitations, resource constraints, and feasibility issues.

Approach and focus.

One of the important steps in addressing the time constraints is to explain to the participants, especially the sponsors, the need to approach cultural analysis as an ongoing process that is embedded in the instructional design process from needs assessment through evaluation and redesign. Because globalization is a relatively new phenomenon and culture is a multifaceted issue, questions dealing with cultural analysis will not have easy answers. Designer 5 noted,

> Probably one of the barriers is inability or unwillingness
> to accept that this is a research process. Americans usually
> want quick answers: how do I fix it. They just want to go
> to a book and real quick say here look this is the answer
> and move on. (¶181)

However, with the right approach and focus, the process of cultural analysis can be defined for the targeted audience and executed in a time-efficient manner. For this, it is critical to craft a framework and a model that outlines the essential steps of the formal process and delineates the scope so the designers can take the time upfront to learn about the cultural makeup of the audience based on that predefined model. The model can be built upon the existing learner analysis variables, such as gender, age, ethnicity, and language, but it also needs to incorporate existing research to add other cultural variables that have significant impact on the content, delivery method, pedagogy, and technological aspects of the course.

Time, cost, and resource constraints.

The issue of resource and time constraints can be tackled by making information on cultural profiles and issues easily accessible for designers to bring cultural expertise to the design and analysis process. Establishing a database created by the support of a research community and building professional organizational networks dedicated to cross-cultural design and analysis is the first step. The goal of such a database would be to provide a repository of varied philosophical, pedagogical, cultural, and epistemological underpinnings of diverse learners based on predefined categories. Such a database would serve as a knowledge base for practitioners and researchers worldwide.

Although the potential benefit of such a repository is significant, the need for cultural analysis does not end with the initial design. Cultural dimensions based on national cultures and other models will help identify some characteristics of the cultural profile of global learners, but focus on intercultural communications and interactions in the online course room itself is essential. Hence, what becomes critical in shaping the cyber-identity of the learner is the communication or interactions in which they are involved, so it is important that not only the designers but also the facilitator and the learners be aware of the cultural profiles of learners to make sense of the diversity in cyberspace.

Feasibility issues.

One of the arguments against establishing a cultural knowledge base is the feasibility of the practice in terms of effort, time, and money needed for gathering information about different cultural theories and profiles of learners across the globe. Designer 3 conducted a full-scale learner analysis to create a diversity training program for a company's leaders spread across the globe. When questioned about the applicability of the findings from that study to other training programs, the designer answered,

> Yes it is doable, it could be replicated at a lower cost,

and this was costly due to false starts. If we have to do it again, both with the hindsight or my experience we would have avoided some of the re-dos and I would lend that knowledge to other people how they could avoid those re-dos. (¶170)

When asked about the reuse of the knowledge discovered in one project for another, the designer commented, "the research that went into creating this and expertise used to create the content can be used to create other training" (¶178). Thus, with solicitous market research, strong institutional support (Alexander, 2002; Bates & Gpe, 1997), and a shared vision by the online distance education community, the goal is attainable.

Personal Barriers and Solutions

One of the major issues related to personal challenges is the absence of well-defined training or knowledge-sharing programs for the participants, especially the designers. Data analysis revealed that most of the participants were not aware of existing research and models that can address cultural issues to some degree and offer guidelines for cross-cultural design. Such existing models include the multiple cultures model (MCM) proposed by Henderson (1996), the cultural adaptation process (CAP) model by Edmundson (2007), and the universal design for culturally diverse online learning framework proposed by Eberie and Childress (2007).

Cultural issues must be part of training and knowledge for not only the designers but also for management and the learners. Awareness and knowledge of differing cultures will have a direct impact on personal biases of the participants and help build *cultural intelligence* (Thomas & Inkson, 2009). Nonetheless, personal bias is something designers need to be aware of so they can acknowledge it and then try to address it if they are truly committed to creating culturally competent design. Designer 5 pointed out that "unless designers are truly committed to understanding the differences and accepting the fact that it is making a difference they will not be invested in designing differently" (¶138).

The discussion of identified barriers and their potential solutions resulted in the emergence of key themes that form recommendations for enhancing cross-cultural competence for instructional design in distance learning. These include the following:

1. establishing well-defined cross-cultural competencies for all the participants,

2. developing and implementing mandatory cross-cultural education and training for all the participants,

3. implementing a tested model or toolkit for cross-cultural learner analysis,

4. building an established knowledge base for cross-cultural design and analysis, and

5. developing and distributing a database of cultural dimensions or profiles.

These provisions, in concert with established best practices for instructional design, helped craft the proposed framework (see Figure 2) for improving the effectiveness of cross-cultural learner analysis to facilitate the design of culturally competent courseware.
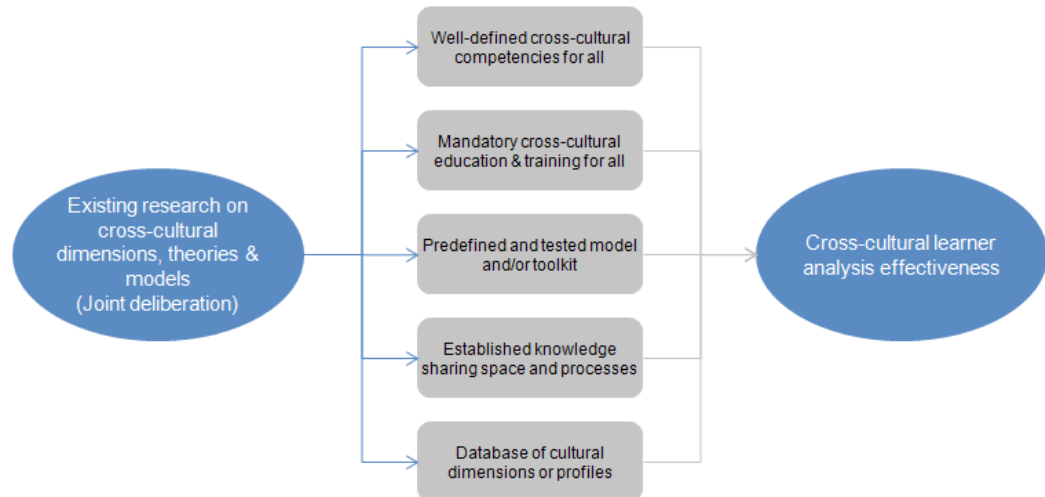

Figure 2. Cross-cultural learner analysis framework.

Limitations

All of the eight designers interviewed for the study were working for corporate organizations, and most were from the United States. Hence, generalizations of the findings to other types of organizations will be limited, even though the participants came from a wide range of design backgrounds, from large global corporate companies to independent contractors and from designers working solely online to ones designing for a blended learning environment. The small participant pool makes it unlikely that all views of instructional design professionals have been captured.

Moreover, since the findings were based on data collected from participants' personal perceptions of cross-cultural analysis and design, the results may be biased. It is also important to consider the proposed framework in regard to its applicability and feasibility, depending on an organization's customer base, training philosophy, distance learning approach, and leadership style. The elements in the framework do not present an exhaustive list but offer an initial set of variables that need attention to begin improving the effectiveness of cross-cultural learner analysis that ultimately supports culturally competent courseware.

Conclusion and Directions for Future Research

The findings of this cross-case analysis revealed many of the often unspoken barriers to cross-cultural design. The acknowledgement and acceptance of the need for cross-cultural learner analysis is one of the most significant steps toward improving cross-cultural analy-

sis, and this study revealed the strong sense of inclusivity among the designers, which was limited largely by organizational and procedural barriers that, although present, are not insurmountable.

The findings produced an inclusive list of approaches to address the barriers related to cross-cultural learner analysis and illustrated the gaps in practice and existing research to reveal that existing resources could be organized in an accessible, systematic fashion to advance and promote cultural considerations within learner analysis. The participants in this study were universal in their agreement that there is an urgent need for joint deliberation on the part of the instructional design community, the research community, and the learners to craft a framework for effective cross-cultural learner analysis. This study was intended to initiate this dialog, and as solutions are proposed, new questions must be considered in subsequent discussions:

1. What are the potential barriers to each one of the proposed elements of the framework as perceived by leaders, management, designers, researchers, and learners? How can they be overcome?

2. What are the cross-cultural learner analysis processes followed by corporate companies in other nations?

3. How can designers make a strong business case to prove that investment in cross-cultural learner analysis will be financially worthwhile in the long run?

4. How can cultural profiles based on nationality or cognitive processing be expanded and how can learning be measured in relation to the key cultural variables?

5. How are cultural identities based on nationality altered in cyberspace to become a third identity? Does the alteration hinder or facilitate learning?

This study provides a foundation for future research that addresses all of these questions. Perhaps most needed is additional research that will validate and expand the proposed framework.

The global distance learning community must work together to create a process that addresses cross-cultural analysis and design for global learners. The purpose in presenting the model is to persuade organizations and instructional design professionals to acknowledge the need for cultural considerations and to seek and incorporate such knowledge within their instructional design practice. The global reality of distance education means that instructional design of any form and in any part of the world must consider the cultural diversity inherent to it. This study is an invitation to initiate discussion on how to address this reality.

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Athabasca University

Shifting the Emphasis from Teaching to Learning: Process-Based Assessment in Nurse Education

Peter Bergström
Umeå University, Sweden

Abstract

Shifting from an emphasis on teaching to learning is a complex task for both teachers and students. This paper reports on a qualitative study of teachers in a nurse specialist education programme meeting this shift in a distance education course. The study aimed to gain a better understanding of the teacher-student relationship by addressing research questions in relation to the students' role, the learning process, and the assessment process. A didactical design comprising three phases focusing on distinct learning outcomes for the course was adopted. Data were collected through in-depth interviews with teachers and were analysed using inductive thematic analysis. The results indicate a shift towards a problematising and holistic approach to teaching, learning, and assessment. This shift highlighted a teacher-student relationship with a shared responsibility in the orchestration of the learning experience. The overall picture outlines a distance education experience of process-based assessment characterised by the imposition of teachers' rules and a lack of creativity due to the limited role of ICT merely as a container of content.

Keywords: Distance education; higher education; e-learning

Introduction

Shifting the emphasis from teaching to learning involves a complex process of changing structures in the education system (Barr & Tagg, 1995). One catalyst for changing structures is the use of information and communication technologies (ICT) in education and society (Brown, 2006). In Sweden, ICT was introduced to the policy agenda in 1994, following the political initiative from the USA in 1993 (Karlsson, 1996). The introduction of ICT was also a starting point for the increased use of ICT in education and particularly in

distance education. Previous studies in nurse distance education have investigated the impact of constructivist approaches to teaching and learning (Legg, Adelman, Mueller, & Levitt, 2009) as a theoretical framework for designing educational experiences (Peters, 2000; Twomey, 2004). In practice, constructivist learning is characterised as active and responsive to individual needs of the learner (Dalgarno, 2001). However, in constructivist studies, the teacher-student relationship is implicit through the interpretation of, for example, being an active learner. Few studies have focused on the teacher-student relationship as such in distance education that involves a shifting emphasis from teaching to learning.

Bergström and Granberg (2007) argue that the use of process diaries is one response to the need to bridge the distance in relation to teaching, learning, and assessment in distance education courses. Process diaries are used to support student reflection that is supported by feedback for monitoring and guidance from teachers at regular intervals. Moreover, process diaries illuminate the conflict for the tutors between their roles that on the one hand are to support formative assessment and on the other to make judgements in relation to summative assessment. Hudson et al. (2009) regard process-based assessment as a formative process that focuses on students' learning over a period of time instead of simply on the product of learning. As a result of this move towards approaches that involve formative assessment and the regular use of feedback, the preconditions of the learning process in distance education are changing. These changing preconditions are considered in terms of Bernstein's (2000) conceptual framework as a relationship between an instructional discourse and a regulative discourse. The concept of discourse is perceived as the teachers' or the students' style of talking and understanding of their practice (Winther Jørgensen, 2000). The instructional discourse creates what Bernstein refers to as specialised skills (Bernstein, 2000, p. 32). From an interview study with in-service nurse students, Bergström (2010) reported on the diversity of skills when students start to focus on the learning process through process-based assessment. The diversity of skills was illuminated through the students' shift of thinking from desk teaching to self-regulated learning, from reproductive learning to productive learning, and from norm-referenced marks to self-reflective assessment. However, the regulative discourse is regarded as teachers' rules of order, in other words what is tolerable or not in the teacher-student relationship. The regulative discourse is the dominant discourse in relation to the instructional discourse.

In this study, the focus is turned onto the teachers' perspective as representative of the teacher-student relationship. Therefore, the aim was to understand the teacher-student relationship in the regulative discourse contextualised within a changing emphasis from teaching to learning in distance education. Thus, the following research questions were addressed in relation to the expectations of and beliefs about teaching, learning, and assessment from the teachers' perspective:

- How does the students' role change in relation to traditional approaches to teaching and learning?

- How does the learning process change in relation to traditional approaches to teaching and learning?

- How does the assessment process change in relation to traditional approaches to teaching and learning?

Background

At the time of this study in 2007, the teachers involved had experienced two significant turning points during a five-year period. The first turning point was the increased use of ICT that became a catalyst for distance education, and the second was the Bologna reform of higher education.

The teachers in this study worked at a department for specialist nurse education in Sweden. In 2002, a strategic decision was taken at the department to move to distance education. This new approach to teaching and learning was regarded as a turning point in each of the teachers' careers. The decision to adopt distance education as the main approach to teaching and learning resulted in the integration of ICT into distance education courses. This created a bottom-up response (Richards, 2004) in the process of shifting the emphasis from teaching to learning. This prompted change in both the learning environment and the pedagogy, which was a result of limiting the regular face-to-face course meetings and shifting towards communications through e-mail and an online approach. The online learning environment is based on a learning management system (LMS) that is used for archiving and displaying assignments and for communication between teachers and students. A web-based video conference tool was used for synchronous communication and collaboration in base groups amongst the students and the teachers. As a result, the students visited the university at the beginning and end of the semester. Through this approach, the number of face-to-face course meetings has decreased by 50%. Moreover, the increased use of ICT can be seen as an example of Richard's (2004) notion of a changed rhetoric towards new ideas and models for developing this kind of practice and context. For these teachers, the rhetoric was characterised by increased demands for developing flexible courses every year and also for alternative approaches to assessment. Recruitment has developed from enrolling students in the neighbouring counties of the university to recruiting students from other parts of Sweden. This development has created pedagogical demands in terms of meeting student needs without having them travel to the university. However, the changed rhetoric is also part of curriculum reforms towards outcome-based models of education.

In Europe, the Bologna process is considered as the most important reform (Eurydice, 2009), which was introduced in Sweden in 2007 (Ministry of Education and Science, 2006). Accordingly, the teachers rewrote the learning outcomes in the syllabus according to the Bologna model. Changing the curriculum has been part of the change in emphasis from teaching to learning (Karseth, 2006). The key challenges for higher education are still considered to be shifting from an instructional paradigm towards a learning paradigm by addressing diversity in learning (TRENDS, 2010) and by recognising the needs for greater flexibility (TRENDS, 2005). A curriculum according to the Bologna model outlines the shift from content-based learning to outcome-based learning (Biggs & Tang, 2007). The teach-

ers chose three learning outcomes for the process-based assessment, which were to

1. identify children and young people who are not handled with care, and families in need of special support, and take necessary actions;

2. analyse lifestyles and risk of accidents among children and young people, and carry through and evaluate necessary actions; and

3. describe neuropsychiatric conditions and psychical health disease among children and young people.

The Didactical Design

The figure below (Bergström, 2010) illustrates the didactical design of process-based assessment for a course of study. The didactical design takes its starting point from the three phases that aimed at covering and capturing the students' learning process during the course.
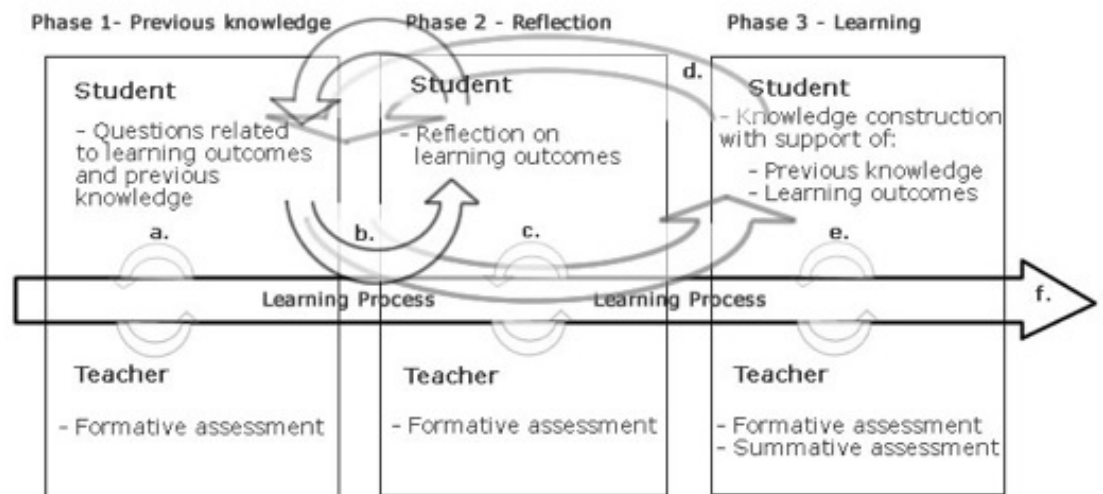
Figure 1. The figure illustrates the didactical design of process-based assessment.

Phase 1 establishes the starting point of the course. In this phase, students describe previous life, work, and study experiences upon which the teacher gives feedback (a). In the middle of the course (phase 2), students reflect on their previous knowledge and the learning outcomes (b), which are followed by teacher feedback (c). When students come to the final phase of the course (phase 3), they summarise their learning in relation to previous knowledge and learning outcomes (d). Then the teacher provides feedback on the students' texts and makes a final judgement (e). Students focus on the documentation of their experiences, events, and concepts and over a period of time gain insight into self-awareness and learning, which constitutes the learning process (f). Recordings of the students' reflections and outcomes of process-based assessment were stored in document files in the LMS for the course.

The teachers used a template developed in a teacher education programme, which was a 10-page document covering all of the phases. The students started by writing about themselves, on topics such as experiences from higher education and work in relation to the theme of the course, child health and school health service. In the first phase—based on previous knowledge—the students were asked to describe their previous knowledge in relation to each learning outcome. In the second phase, the students' task was to reflect on the learning outcomes in relation to the course assignments, the literature, and the lectures. In the final phase, the teachers asked the students to analyse their learning in relation to the learning outcomes and reflections.

Theoretical Framework

In order to understand the regulative discourse, the material was analysed through the lens of the message system: curriculum, pedagogy, and evaluation (Bernstein, 1977, 1990). These three concepts are only used as analytical concepts. In this analysis, Bernstein's key concepts of classification and framing were applied. In order to understand the conditions and reproduction of the teacher-student relationship, the message system was analysed from the perspective of educational codes, in other words elaborated code and restricted code (Bernstein, 1990).

Curriculum in Relation to Classification

Bernstein used the concept of curriculum with a theoretical and symbolic meaning similar to that of Stenhouse, cited in Ruddock and Hopkins (1985). Stenhouse explains the symbolic meaning of the curriculum as having "a physical existence but also a meaning incarnate in words or pictures or sound or games or whatever" (Ruddock & Hopkins, 1985, p. 67). Accordingly, curriculum is interpreted with a broad understanding covering the teachers' practice. In this analysis, curriculum is analysed through the concept of classification (Bernstein, 1977, 1990), which informs us about the relationship between categories. Classification is a relative concept and is either strong or weak. However, classification can be applied to an analysis at different levels, such as the relationship between the external and the internal value of classification. For example, the external value of classification can consider an educational reform in relation to the internal value of classification, which considers elements of content in a course's syllabus. These values inform us about the power relationship between categories. Strong classification signifies a hierarchical power relationship, while the opposite pertains to weak classification. Bernstein (1990) argues that strong classifications reproduce relationships among categories.

Pedagogy in Relation to Framing

The concept of pedagogy highlights the pedagogical practice from a theoretical perspective, which is perceived through the relative concept of framing, creating the notion of a message (Bernstein, 1977, 1990). This message is derived from the relative nature of framing that informs us who is in control, for example in the teacher-student relationship. If the analysis has a purpose of understanding something external, for example a reform, in relation to

the internal pedagogical practice, two values need to be considered. An educational reform with a value of weak external framing carries a message of teacher control. In the pedagogical practice, a study guide with low structure has a value of weak internal framing and the students are in control, such that they could have, for example, influence on the learning environment. Thus, understanding pedagogy through the concept of framing, Bernstein (1990) argues that the notion of control creates a message in the external-internal relationship.

Evaluation as a Function of Classification and Framing

According to Bernstein (1977), evaluation is a function of curriculum and pedagogy and is understood as the relationship between classification and framing. In practice, evaluation is understood as the teachers' assessment. Accordingly, the assessment practice depends on the syllabus and the teachers' approach to teaching and on how the learning environment is arranged.

Educational Codes

Bernstein (1990) explains an educational code as something tacitly received by taking part in education. The meaning of the code (its orientation) communicates two themes: an elaborated code derived from the principle of keeping things apart or a restricted code derived from the principle of keeping things together. In this paper, the educational code is considered to be the symbolic relationship between policy and practice. The analytical tool for investigating the code concerns the relationship between the internal and external values of the relative concepts of classification and framing. For example, if a policy reform is mandatory for the institution, external classification is strong. If the message of the reform aims to tell the teachers how to teach and assess, external framing is strong. Depending on the relationship between the external and internal values, the analysis points towards a specific meaning as either an elaborated or a regulative code (Bernstein, 1990).

Methodology

A qualitative approach was adopted in order to understand the regulative discourse in the shift in emphasis from teaching to learning. The regulative discourse in the teacher-student relationship was studied from the teachers' narratives of process-based assessment. A strategy for reading and analysing the texts is outlined, which addresses the trustworthiness of the interpretations of the empirical material.

The Qualitative Interviews

The two teachers (N = 2) who taught in the course were chosen for in-depth interviews. They are above the age of 50 and have worked with distance education for between four and five years. Because the study was conducted over one semester, the model for interviewing the teachers was through four semi-structured, in-depth, face-to-face interviews. The interviews followed the occasions for teacher-student interaction in the didactical design. Before they were interviewed, the interview themes were tested with two other teachers.

This process contributed to a modification of the interview themes and the follow-up questions. For the teachers in this study, the first interviews were conducted between June and August 2007, focusing on the teachers' background as teachers. The second interview took part three weeks after the course started in September, focusing on the work of the students' previous experiences. In December, a third interview focused on the students' reflections. In January and February 2008, a fourth interview took place focusing on students' learning. The interviews followed a structure of themes according to the didactical design and areas of teaching, learning, assessment, and use of ICT. The interviews were recorded digitally and transcribed, and notes were taken during the interviews. The recorded material from the interviews amounted to 11 hours and 35 minutes.

Ethics

At the outset, the teachers agreed to a statement of research ethics. This followed the guidelines from the Swedish Research Council (2001) and addressed the aspects of beneficence, non-malfeasance, informed consent, and confidentiality/anonymity.

Thematic Analysis

The empirical material was analysed through inductive thematic analysis influenced by Boyatzis (1998) and Malterud's (2009) approaches. The empirical material was read and re-read several times, ultimately interpreting what the interviewees were implicitly or explicitly saying. In this process of understanding the essence of the interviews, a strategy was followed in which important signs (Malterud, 2009), episodes, comparisons, and contrastive thinking (Coffey & Atkinson, 1996) were searched for in the written transcriptions. An analytical process of searching for a relationship in the captured essences of the empirical material then followed. As a result of this process, three descriptive themes could be coded to a majority of the empirical material. The reliability and validity of the coding was considered in the subsequent reading of the material in light of the strategy for capturing the essence. Text of the chosen learning outcomes in the syllabus with regard to meaning-bearing concepts was analysed in relation to the interviews. However, as the purpose of my research was to better understand the teacher-student relationship in process-based assessment, taking the analysis a step further was necessary. This step moved from the descriptive level to a higher analytical level by integrating theory into the analysis in order to investigate what underpinned process-based assessment. The themes were interpreted through Bernstein's (1977) message system of curriculum, pedagogy, and evaluation by using the relational concepts of classification and framing. The results from the analysis of the message system in the form of the educational code were outlined in order to understand the regulative discourse.

Results

The results are structured and presented in two stages, with the aim of understanding the teacher-student relationship in light of the research questions regarding the student role, the learning process, and the assessment process from the teachers' perspective. In the first

stage, the teachers' practice was analysed. In this process of analysing the empirical material, five descriptive categories were found: the organisation of the course, the confusion of working in the LMS, the teachers' criteria for assessment, difficulties in assessing the students, and a contextualised learning process. The five categories were developed into three themes covering most of the empirical material. The three themes are the teachers' relationship with the students, the teachers' interaction with the content, and the students' interaction with the content. These results were analysed through Bernstein's (1977) message system of curriculum, pedagogy, and evaluation. The teachers' voices were frequently quoted from the interviews. Furthermore, in this study the teachers' narratives about their feedback, actions, and ideas were important sources for understanding the themes according to the message system of curriculum, pedagogy, and evaluation. The names of the teachers are replaced with pseudonyms.

In the second stage of the analysis for understanding the teacher-student relationship, the focus turned to the relationship between policy and practice. By applying Bernstein's (1990) educational codes through a theoretical lens, the social relationship from practice could be analysed in relation to educational reforms.

The Teachers' Relationship with the Students

In the teachers' relationship with the students, the relative concept of classification highlighted the relationship between valid content from the learning outcomes and less valid content from the students' process. Moreover, the relative concept of framing outlined the teachers' mode for communication in the teacher-student relationship.

Curriculum.

In the students' previous knowledge, a curriculum of weak classification was expressed. In practice, the weak classification was seen when the teachers encouraged the students to use content outside of formal education, for example the students' professions or lives. Ellen explained, "I ask . . . if they don't think that they have learned somewhere else [in another situation]." Moreover, a shift towards strengthened classification was highlighted in the second phase of the process-based assessment by using the learning outcomes in the syllabus. Ellen reflected, "I repeated more of what they said [in Phase 1] . . . but [in Phase 2] I use the learning outcomes, which I take as a starting point." Overall, the teachers expressed a curriculum in the process of change—from strong to weak classification with regard to the students' content. Changing the feedback involved another approach to the students' content in practice, which was a move from feedback of confirmation and summaries towards a problematising approach. The wish for a changed approach in practice outlines a strengthened perspective of a curriculum of weak classification. Caryn said, "I will try to think more from a reflective and problematising approach."

Pedagogy.

The teachers' approach in practice highlighted the difficulties of bringing the students' skills and experiences to a predefined course structure. The teachers' approach highlighted tacit

communication with the students in the syllabus and in the instructions of the template but also explicit communication in the teachers' feedback to the students. In the document files, the template showed a method of strong framing through signals of non-negotiation with the students in which the learning outcomes were chosen in advance. However, the format of the questions in the template indicated weak framing: the students had the freedom to write about their skills and experiences in relation to the learning outcomes. The teachers' approach to the students was not to take a standpoint. Ellen argued, "The students have what they have as previous knowledge."

The teachers saw their own reflections and analyses about their feedback as repetitive, the majority of their comments as too general, and their questions not sufficiently open. Ellen said, "By giving summaries of what has been said . . . and maybe an open question." The teachers' approach indicated weak framing because of the students' right to create content. In the students' reflections (phase 2), framing became stronger when the teachers used the learning outcome as a point of reference for validating the students' element of content. Caryn explained, "Firstly, I encourage them . . . and then I give support or express if something is missing."

Evaluation.

The function between the strengths of classification and framing reflected a shift in assessment. The teachers argued for a move towards a problematising approach through weak classification and framing. Thus, the assessment condition did not highlight a question of right or wrong in the student-teacher relationship. Instead, the teachers' feedback outlined encouragement by confirmation, as Caryn explained, "To confirm the students' writing . . . they shall feel themselves confident in their creative process. I think this is very important," and by questions in which the students self-regulate their learning. Ellen said, "I thought when the students got these questions back they should reflect a bit more without replying to me."

The Teachers' Interaction with the Content

In this theme of the teachers' relationship to the content, the learning outcomes were explicitly discussed and valued in relation to process-based assessment. Classification informs us about the insulation of content in relation to the learning outcome. Framing, the issue of control in the teacher-student relationship, was derived from the teachers' reasoning about the philosophy in the course design and for process-based assessment.

Curriculum.

For process-based assessment, the teachers chose three learning outcomes in the syllabus that raised different expectations of learning. The three learning outcomes contained the verbs "to analyse," "to identify," and "to describe." In the students' learning, they encountered content that yielded a variety of answers reflecting the nurse practice in clinic. The teachers found that the learning outcome in the syllabus gave different categories of answers, from diverse to predefined. The three verbs highlighted to what extent the formal

content had strong borders in relation to other categories of content. The two verbs "to analyse" and "to identify" in the syllabus were open to different perspectives, indicating a curriculum of weak classification. Caryn implicitly expressed the diverse nature of the verb "to identify": "In the first learning outcome, [the students] have to think how they identify those, which is some kind of process." The verb "to describe" outlined a curriculum of strong classification. This means that there are strong borders in relation to other categories of content, for example informal content outside the context of study. Ellen explained, "I think to describe that is at a rather low level . . . just . . . describe what you have read in a book."

Pedagogy.

Process-based assessment was considered as weak framing through the holistic approach. Ellen explained, "Not only to think about this assessment of a child's development, but also take care of the whole situation . . . to understand it in a holistic way." The only document that focused on and labelled the learning outcomes in relation to other activities, such as assignments, was the template for process-based assessment. The teachers' philosophy for process-based assessment builds on weak framing with the learning outcomes as the students' pathfinder. Ellen explained, "The learning outcomes are not heavily commented on in the assignments . . . but I want them to understand that what they do in clinic is the learning outcome. It is their tool at clinic."

Evaluation.

The function of the strengths of classification and framing indicated a changed condition of assessment. Process-based assessment was a more difficult experience than traditional forms of assessment. The boundaries became ambiguous with respect to time and content, which affected the teachers' practice of assessment. The weak classification communicated in the learning outcomes indicated tolerance towards the students' content. The teachers did not argue if the judgements were right or wrong but stressed to what extent the learning outcome was reached and issues with regard to resources in terms of time. Ellen explained that "in a home exam I follow a template, either right or wrong. That is much quicker than this assignment, where I need to return back to the students' previous phases." The teachers were critical about the difficulty in failing students in the practice of process-based assessment as compared with home exams. Changing perspectives created doubts, as Caryn reflected, "I can imagine that my assessment was not sharp enough." Furthermore, in the assessment process, Ellen's narrative considered the shift from a strategy of comparing all student answers to reviewing the reflection in relation to the learning outcomes. The weak framing highlighted a different condition for the teachers' assessment. By comparison, the teachers found flexibility in the time frames for reflection in process-based assessment but no tolerance for delays in sending in home exams.

The Students' Interaction with the Content

In this theme, classification informs us of what the teachers expect of the students' interaction with the content. The teachers outlined the tensions between strong and weak framing

in their understanding of the students' approach.

Curriculum.

In the teachers' narratives from practice, they argued for an informal syllabus with two implicit learning outcomes based on the verbs "to make," that is "to make visual" and "to make aware of" These concepts indicate a wish for a curriculum in which process-based assessment builds on weak classification of content. The informal syllabus indicated a tolerance for diverse content with the purpose of integrating different experiences from different contexts of learning. Ellen explained, "I think . . . you put yourself into this context, to see yourself in this. What is my role in this context?" Caryn added, "You store different experiences and then it would be very strange not to make the students aware of their previous experiences."

Pedagogy.

The teachers were forced to use a particular LMS that highlighted strong framing in which neither teachers nor students had enough control to change the space. A mistake in the setting with regard to the number of submissions of the document created a confusion of documents on different computers, the need for cut and paste between documents, and feedback sent through different channels of communication such as e-mail and instant messaging. Caryn explained,

> It is not possible to submit them again . . . instead they send them through PIM [instant messaging] and e-mail . . . My thought was it is a little bit of a mess! Where was that file stored?

The teachers aimed for a problematising approach in which the students had increased control over choosing content. Teachers can only estimate plausible sources of knowledge and consider how the students use a particular situation. These teachers described an approach of weak framing in the students' interaction with the content. Ellen said, "This kind of learning outcome such as "identify children . . . Several students have been working close to [the learning outcome], and several of them had met it in other circumstances, for example in school." Ellen continued, "When [the students] have been at the clinic at practice and meet patients, which they refer to at several occasions [in the text] . . . then the students have learned from the situation." However, the teachers saw a conflict between the approaches of weak framing in relation to strong framing. Caryn explained, "Some students think it is more enjoyable to read a textbook with a predefined answer instead of problematising."

Evaluation.

In the relationship between the strengths of classification and framing, understandings of assessment diverged. A divide emerged between what the teachers expected from the stu-

dents and what they believed about the students' approach to learning. Weak classification is by definition a weak insulation between what the teachers can expect of the students' text in relation to the learning outcome. The students can decide what is and is not valid content. This creates a situation involving various responses among the students, which Caryn had noted, finding that "the students' answers were often diverse." The diversity of the students' text became part of the nature of assessment.

The Institutional Level of the Analysis

The practice of the teacher-student relationship was highlighted by the three components of the message system: curriculum, pedagogy, and evaluation. The concepts of the message system were derived from the relative concepts of classification and framing. Classification and framing gave rise to diverse conditions of the social relationship through the concepts of power and control. For a better understanding of the teacher-student relationship at an institutional level, Bernstein's (1990) educational codes were used in the analysis.

In the analysis at the institutional level, the use of the theory of elaborated code and restricted code (Bernstein, 1990) highlights the conditions and (re)production of the teacher-student relationship in a Swedish context. Two significant changes at the department pointed to a particular meaning and interactional context (Bernstein, 1990). The Swedish higher education reform of 2007 made the Bologna reform mandatory for the higher education institutions, indicating strong external classification. The guidance at the policy level is intended to promote student-centred learning and flexibility (TRENDS, 2005, 2010), indicating a message of weak external framing. The teachers' adaptation of the Bologna reform yielded a curriculum of weak classification. The interactional context in society has changed in relation to the bottom-up effect of ICT (Richards, 2004). People's daily use of the technology and the top-down effect of the Swedish ICT policy (Karlsson, 1996) indicates strong external framing. The department followed this transition by shifting the interactional context for teaching and learning towards distance education supported by the use of ICT. Process-based assessment is an isolated part in relation to the other parts, such as seminars and assignments, in this study. This is based on a design and approach with a preponderance of weak internal framing highlighted in the message system of pedagogy.

In summary, the educational code informs us of the relationship between the decisions taken at a policy level and the teachers' practice. This analysis outlines a framework of the regulative discourse of policy and practice. The educational code for this institution's approach to distance education indicates a restricted code. The reforms supported Bernstein's notion of keeping things together, which created this particular teacher-student relationship in process-based assessment.

Discussion

This study aimed to create a better understanding of the teacher-student relationship in the shift from teaching to learning by studying the regulative discourse of process-based as-

sessment. The aim was reached by addressing the three research questions, which considered the students' role, the learning process, and the assessment process. In relation to the students' role, process-based assessment gave them a voice, ultimately giving them power and control, particularly in the learning process. In relation to the learning process, bringing different experiences together through reflections raised issues of a changed practice that also affected the assessment process. Finally, in relation to the assessment process, a changed practice was highlighted through the relationship between curriculum and pedagogy.

The student role in the restricted code outlined a specific practice building on preponderance towards a power relation in which the students have ownership. The students were meeting a changed approach for teaching, learning, and assessment through the problematising and holistic approach. The teachers' indication of what the students expected (an elaborated code) was in contrast to the restricted code they faced in process-based assessment. The restricted code was found in the issue of power and control. The students were expected to find relevant elements of content in relation to the learning outcomes. This approach was difficult for the students to internalise, which did not become easier due to the teachers' inexperience with the pedagogy. Moreover, a contradiction to this approach and to the changed student role was the detailed structure of the document files showing the teachers' tacit power. However, the student role in this distance course was complex due to both a formal and an informal curriculum and to the pedagogy because the assignments held strong framing (and probably strong classification). This will be considered in relation to the students' responsibility for finding situations in practice and for reflecting holistically on their roles as nurse students becoming specialist practitioners.

In the learning process from the perspective of a restricted code, the teachers were pointing out the shift towards students' texts with a problematising approach. The instructional discourse outlined the problematising and holistic approach, which also indicates the regulative discourse in practice. The regulation was tacit and diverse in the curriculum, and the change in the mode of teaching would probably need to be strengthened in the instructions to the students, which is a question of both designing the curriculum and of ways of understanding this distance education pedagogy. Clearly, in this distance education context the learning outcomes in the syllabus became an important tool in the learning process. The students faced both formal and informal learning outcomes that were also part of the complex picture. In order to take care of the learning process, there is probably a strong need for developing learning outcomes that address the process outcomes. Relevant examples of such outcomes are those derived from the voice of these teachers with regard to the verbs "to make visual" and "to make aware of."

The teachers' feedback was also part of the students' learning process. For the teachers, one of the difficulties was to give relevant feedback. The encouraging and confirmative feedback was rather passive and kind in relation to the teachers' wish for being more active through open questions. This is an issue that highlights the power relationship between the teacher and the student. When the teachers were passive, they did not use their power. The teachers used their power if the student had gaps in the learning outcomes in the syllabus. In

principle, the students were open-minded in their texts according to the holistic approach of bringing different experiences of learning together. The teachers expected the students to take care of their learning process without the teacher watching. In contrast, if students expect an elaborated code and they do not know what is expected of them, there is a tacit conflict of different expectations in the student-teacher relationship.

The analysis of the results pointed to the teachers' and students' use and the purpose of using information and communication technologies (ICT). The use of ICT made it possible to conduct this course at a distance. Technology helped both the teachers and students to interact at a distance through the storage of document files. However, the problem is that ICT was used as nothing more than a container of content supporting interaction and storage, which the teachers cannot be blamed for. This use of ICT outlines a traditional approach to teaching and learning created by the LMS provider. As a container of content, ICT supported communication in the teacher-student relationship; however, none of the information is shared, tagged, or processed by the computer. This would probably provide a different dimension to the teacher-student relationship.

The assessment process from the perspective of the restrictive code indicated complexity with regard to the teacher-student relationship. In practice, assessment was difficult due to the detailed structure of the template because of issues related to the students' self-esteem. This complexity highlighted the power relationship between the formal and informal learning outcomes in relation to the personal nature of the students' texts. The student texts were regarded as a source for developing and encouraging the students in their learning. Furthermore, the teachers' action and thinking showed a humble attitude in relation to the nature of the students' texts with regard to ownership of their reflection and analysis.

The informal learning outcomes deserved to be expressed formally in the syllabus. This would be a significant reform at the institutional level but also a strengthening of the restrictive code. However, it is probably easy to fall into the trap of discussing summative assessment of facts in relation to process-based assessment of the students' learning. This is not a question of decreasing the specific facts nurse specialist students need to gain in order to get certification through summative assessment. This is a question of developing the students' previous knowledge and learning in order to make their distance learning experience richer.

In summary, this study shows an increased understanding of the teacher-student relationship from the perspective of the regulative discourse. This discourse highlights the shift in emphasis from teaching to learning through the research questions, which focused on the student role, the learning process, and the assessment process. With regard to the social relationships, this study highlights the complexity of this shift, which encompasses the three aspects identified in the research questions. However, in relation to the student role, students need to perceive their teacher more as a critical friend than an assessor. For example, in the contrast between the formal learning outcomes and the informal learning outcomes, it is plausible to believe that the student role is a response to the formal learning outcomes. The problematising approach in practice shows a richer learning process but also high-

lights a difficult and complex shift in the teachers' practice. The complexity is related to the teacher-student relationship in which students' power and control are increased by new and different expectations. The assessment process is also part of the relationship between power and control. In order to make the learning experience richer, students and teachers need to change their approach to assessment, which also relates to the student role and the learning process. The students need to assess themselves, and the teachers need to guide them through that process with learning outcomes that support diversity and build on personal experience. Finally, the role of ICT, that is the LMS, provides a problematic picture of the social processes highlighted in this paper. The internal meaning of the LMS only supported storage of content, nothing more. Accordingly, the use of this LMS reinforced the traditional roles in the teacher-student relationship.

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Quality of Learners' Time and Learning Performance Beyond Quantitative Time-on-Task

Margarida Romero and **Elena Barberà**
Elearn Center, Universitat Oberta de Catalunya, Spain

Abstract

Along with the amount of time spent learning (or time-on-task), the quality of learning time has a real influence on learning performance. Quality of time in online learning depends on students' time availability and their willingness to devote quality cognitive time to learning activities. However, the quantity and quality of the time spent by adult e-learners on learning activities can be reduced by professional, family, and social commitments. Considering that the main time pattern followed by most adult e-learners is a professional one, it may be beneficial for online education programs to offer a certain degree of flexibility in instructional time that might allow adult learners to adjust their learning times to their professional constraints. However, using the time left over once professional and family requirements have been fulfilled could lead to a reduction in quality time for learning. This paper starts by introducing the concept of quality of learning time from an online student-centred perspective. The impact of students' time-related variables (working hours, time-on-task engagement, time flexibility, time of day, day of week) is then analyzed according to individual and collaborative grades achieved during an online master's degree program. The data show that both students' time flexibility ($r = .98$) and especially their availability to learn in the morning are related to better grades in individual ($r = .93$) and collaborative activities ($r = .46$).

Keywords: E-learning; computer-supported collaborative learning; academic performance; e-learning quality; time flexibility; time-on-task; time quality; learner time

<div style="text-align:center">**Introduction**</div>

In assessing e-learning quality, the factor of time has been studied in relation to instructional time, examining a course's flexibility in terms of duration (Van den Brande, 1994), the pace of learning (Collis, Vingerhoets, & Moonen, 1997), and the choice e-learners have about when to learn in an individualized way (De Boer & Collis, 2005; Ehlers, 2004) without synchronicity constraints (Arneberg et al., 2007). Maintaining flexibility in the duration, pace, and time chosen for learning might ensure instructional quality but, far from guaranteeing learners' time-on-task quality, it invites time-poor e-learners to choose to spend insufficient time, to work too slowly, and to devote an inadequate number of time slots to learning in terms of the quality of cognitive time.

We believe the level of quality of cognitive time is defined by mental activity capabilities at a specific point in time, such as focus, information-processing capacity, consciousness, and higher-order cognitive skills (HOCS) like decision-making. The idea that learning takes time is shared both by researchers and educators, who state that students need "time to talk, write, reflect, and otherwise engage in activities" (Cross, 1999, p. 10) and must devote "time and effort to out-of-class studying" (Kolari et al., 2008), allowing them "to own their learning" (Wolk, 2001, p. 59). Quality e-learning requires quality in instructional time and quality in students' time. On the one hand, instructional time flexibility is one of the main reasons for enrolling in an online course (Schrum, 2002; Sullivan, 2001), and, on the other, time availability is one of the main constraints on distance learners when it comes to continuing with their studies (Vergidis & Panagioutakopoulos, 2002).

Considering the relevance of instructional time and e-learners' time to successful online education, we have divided learning time into quantitative and qualitative categories. Motivation has been considered an important factor in students' decisions to devote quantitative time-on-task and in the desire to "persist and complete assigned tasks" (Dev, 1997). Besides the quantity of time learners spend on a task, the quality of this time affects their learning performance. Students' time quality in online learning depends on their availability, willingness, and motivation to devote quality cognitive time to online learning tasks. We begin by analyzing the implications of three major concepts in the online learners' time-on-task: time flexibility, time-on-task quantity, and time-on-task quality. We then move on to look at the impact of quantity of time-on-task and the attributes of time spent on the learning task and performance.

Time Flexibility in E-Learning

Time flexibility is one of the most appealing options offered by distance education (Felix, 2001; Valenta, Therriault, Dieter, & Mrtek, 2001; Zhang, Zhao, Zhou, & Nunamaker, 2004), allowing two kinds of time to be combined: instructional time and learners' time. From an instructional point of view, time flexibility means that academic learning time can be adapted to learners' availability and learning development. For students, we define time flexibility as the students' ability to regulate their time-on-task according to their learning time availability, the instructional time requirements, and the flexibility of the learning

tasks. Learners' time flexibility is determined by their capacity to allocate time to academic activities and the quantity and quality of time they can spend on these activities. We should, therefore, consider online learning time flexibility in terms of both instructional time flexibility and student time flexibility.

Instructional time determines the duration, pace, and synchronicity of the learning activities that make up the learning program in which the student is involved. Collis identifies several different types of flexibility in online courses, including "time flexibility, content flexibility, entry and completion flexibility, instructional-approach flexibility, learning-resource flexibility, technology-use flexibility, interactivity and communication flexibility, course-logistics flexibility, as well as location flexibility" (1998, p. 376). Instructional time flexibility, determined by the curriculum and flexibility of the learning activities, could be considered an externally regulated time flexibility. Schellekens, Paas, and Van Merriënboer (2003) also look at students' perception of this instructional flexibility subjectively, considering time flexibility as it is perceived by the learner. Both instructional time flexibility and students' perception of this flexibility have been considered indicators of e-learning quality (Arneberg et al., 2007; McGorry, 2003; Högskoleverket, 2008) and an expectation of e-learners (Ehlers, 2004; Harasim, 1990; Lorenzetti, 2005). However, time flexibility has also been regarded as a force working against course structure and quality (Kanuka, 2002), introducing the possibility that instructional flexibility and higher learner regulation could lead to lower learning quality.

Despite the fact that they have examined instructional and organizational flexibility, only a few studies take into account the time attributes of learners, such as time-on-task quality and time flexibility in terms of the time of day or day of the week. Online universities currently do not systematically consider the flexibility and quality of their students' time before accepting their enrolment. Regarding the system as one that can be used anywhere and anytime and misjudging both the amount and quality of time students have, online universities allow time-poor students to enrol in distance learning programs without considering whether they have sufficient time (in terms of quantity and quality) to succeed in a given program. Where traditional universities have the ability to ensure that their students devote a portion of their quality time by requiring them to attend classroom sessions, online educational institutions do not have a direct way to ensure the quantity and quality of their online learners' time-on-task because instructional time flexibility leads the learner to regulate it themselves (Romero & Lambropoulos, 2011). By failing to measure learners' time-on-task qualitatively, educational institutions may be wasting their instructional time as a true knowledge asset (Boisot, 1998), which could be encouraging students to devote low-quality time to their learning activities. Grundspenkis and his colleagues believe that flexibility in instructional time could encourage the learner to study "at [an] inappropriate time, e.g., late evening, when he/she is very tired and therefore ineffective" (2006, p. 337). Considering that "the single most important variable [among students who succeeded with distance learning] is the students" (Moore & Kearsley, 1996), we focus this study on time flexibility and quality from the online learners' perspective.

We looked at the significant differences in students' time flexibility in individual and collab-

orative activities related to the use of synchronous communication in collaborative learning. In individual settings, students' time flexibility has been taken into account by Norwegian distance education authorities, who have been committed "to asynchronous communication and deliberately avoided synchronous communication technologies. Communication should take place when it suits the student, not the institution" (Arneberg et al., 2007, p. 7). Individual tasks allow students to organize their time-on-task allocation during an activity. In collaborative tasks with a certain degree of interdependence, students must coordinate their work. Despite the various asynchronous ways of carrying out the task, coordination involves a certain degree of time commitment at the group level that reduces individual time flexibility (Romero, 2010), leading students to believe that "online collaboration is not time-flexible at all" (Levinsen, 2006, p. 43).

Quantity of Learning Time and Academic Performance

Students' time availability is therefore a central element in e-learning activities because of the lack of time adults have, as the term "time scarcity" indicates (Douthitt, 2000). Students engaged in e-learning (and distance learning in general) are often adult learners who have work and family constraints (Diaz, 2002; Pallof & Pratt, 2003). The time they can allocate to their learning activities is therefore reduced (after a day's work, while the children are asleep, on weekends, etc.), and is often the time left over once their professional, social, and family commitments have been fulfilled. Studies published on the time factor in academic performance have analyzed the relationship between time-on-task spent and academic performance, especially in the context of face-to-face education homework assignments. Wagner, Schober, and Spiel (2008) show a positive relationship between performance and the quantity of time allocated by postsecondary learners ($N = 824$). Using the German PISA data set in primary education ($N = 24,273$), Trautwein (2007) observes that the frequency of homework is even more relevant in academic performance than the amount of time it takes to complete assignments. Other studies on time quantity and academic performance provide variable results, with a slight positive relationship between the quantity of study time and performance (Allen, Lerner, & Hinrichsen, 1972, $r = .23$; Hinrichsen, 1972, $r = .32$; Wagstaff & Mahmoudi, 1976, $r = .31$) and indicate a negative relationship in some cases (Greenwald & Gillmore, 1997, $r = -.15$). The analysis done by Schuman et al. concluded that "there is at best only a very small relationship between amount of studying and grades" (1985, p. 945). Observing a group of 120 college students in an online pharmacist program, Wellman and Marcinkiewicz (2004) found that time spent online by learners was only weakly correlated with learning.

This variability in the results of studies examining the relationship between quantitative time-on-task and performance in face-to-face and online learning activities might be explained by (1) the different methodologies used in assessing time-on-task and academic performance and their reliability (Schuman et al., 1985); (2) differences in the time quality of the time-on-task spent; and (3) the impact of compulsory, formal academic time spent by students working together during class-based courses in face-to-face contexts. In distance education, students have the ability to decide how to allocate their time according to instructional time flexibility. The amount of self-regulated time-on-task in face-to-face

educational contexts is part of the time spent outside of the classroom; in distance education, self-regulated time comprises all the instructional time that is available for the student to regulate.

We therefore propose to analyze the relationship between time-on-task and performance, introducing the concept of quality cognitive time as a major attribute of the time-on-task spent. We propose to explain the differences in the relationship between quantitative time-on-task and performance in face-to-face and online learning activities by including the quality of time spent on academic activities in our analysis of the impact the quantity and quality of learners' time-on-task have on their academic performance.

Learning Time Quality According to the Time of Day (00:00 to 24:00)

Time quality is made up of attributes related to a certain kind of activity. In academic settings, the quality of students' learning time is considered to be cognitive, an attribute that facilitates success in the learning process. Depending on the nature of the learning activities, different attributes of the students' time are required. These attributes depend not only on the task difficulty (Belmont & Butterfield, 1971; Kobasigawa & Metcalf-Haggert, 1993) but also on whether learning is individual or collaborative. In collaborative learning tasks, students need to regulate their own time-on-task—in terms of quantity, quality, and synchronicity—according to the learning times of their fellow students (Romero, 2010). Both in individual and collective learning activities, we consider the quality of learning time to be defined by the degree of sustained attention and lack of interruption, the degree of cognitive capability, and the emotional state of the student. Time of day is one of the indicators that has been used to define time quality. Some researchers have analyzed the degree of alertness by monitoring physiological indicators as they change during the day. The early work of Blake (1967) suggested that alertness changes depending on the time of day and introduced the term "post-lunch dip" to describe the diminished attention observed after lunch. In academic settings, Lewis and his colleagues (1988) observed that concentration levels were higher at 7 p.m. among undergraduates at Cambridge University. However, physiological indicators of actual alertness and alertness as perceived by the subjects might be different, according to Kramer and his colleagues (2000). In their study, subjects stated that their alertness was highest at 11 a.m. and 3 p.m., while physiological indicators pointed to higher alertness at 7 a.m. and 9 p.m. These studies were carried out among individuals engaged in a single, primary activity (professional or academic). In distance education, adult learners have primary professional, social, or family responsibilities, and distance studies are considered to be secondary. We might therefore expect students to engage in learning time after their primary activity, at a time of day when alertness is lower, both because of the time of day and the fatigue caused by the primary activity, assuming that, in general terms, the evening and night are times when cognitive quality is diminished and the morning and weekends are the times with the highest cognitive quality because of the absence of a previous activity.

Objectives

Wishing to examine the impact of quantity and quality of academic time-on-task spent by students enrolled in online education programs, we conducted the analysis within a course that combined individual and collaborative activities. We looked at the students' time flexibility and had them record their working hours and time-on-task engagement for each major period of the day (morning, afternoon, evening, night) on both weekdays and weekends. We tested the relation between performance and time-on-task allocation during the morning and weekend because there was no previous activity and a higher degree of quality cognitive time available during those periods. We then compared these time attributes with the students' grades in both individual and collaborative activities in order to analyze which factors are relevant in each context.

Two main hypotheses were formulated for the purpose of these tests. The first hypothesis proposes an overall positive relation between the time-on-task devoted by students and their academic performance in individual and collaborative activities. The second hypothesis posits higher performance in individual and collaborative learning activities engaged in during the morning and weekend days.

Context and Methodology

The study was conducted with master's students (N = 48) enrolled in a compulsory course titled *Learning Scenarios in Online Learning* during the second semester of the 2009–2010 academic year at the UOC virtual campus. The course was composed of five activities, the first of which was individual and not graded. The second and third activities were also individual activities, followed by the last two activities, which were collaborative and carried out in groups of four. These groups were created homogeneously and took into account the individual grades obtained in the previous activities. All the activities were written assignments related to each of the topics covered in the course. Both in individual and collective assignments, students were able to regulate their time-on-task between the start of the task and the deadline for the assignment to be submitted. These written papers can be considered ill-defined tasks inasmuch as the task statements did not include all the information and organization required to carry them out (Chi & Glaser, 1985). From the point of view of learning regulation, these tasks are not only regulated by students (self-regulated learning) in the case of the individual assignments but also by their peers (co-regulated) in the collaborative assignments. In ill-defined, self-regulated, and co-regulated learning activities, students must organize and regulate their own time-on-task engagement. In this case, low external regulation and task definition increases student responsibility for defining the task and regulating the learning process.

At the end of the course, the students recorded the hours they worked per week, their weekly engagement in learning tasks, and the time of day these were completed (morning, afternoon, evening, night), as well as the weekdays or weekend days spent during the course. We collected the students' records of the time-on-task with the EuroCAT tool (Lambropoulos,

Faulkner, & Culwin, 2011; Romero & Demeure, 2010), which not only supported the definition of the students' weekly temporal engagement in their online education but also their professional activities. Student time flexibility was defined as the number of different times in a day the student could engage in the learning activity. More specifically, time flexibility was defined as the range of times during the weekdays or weekend days students were able to spend on the learning activities during the course according to their EuroCAT declaration. The maximum degree of time flexibility was attained by students who were able to work at any time of day on any day of the week. Those students with a high degree of time flexibility are, therefore, potentially able to regulate their time-on-task more easily because they can allocate the best quality time to carrying out their individual and collective learning activities.

Results

We analyzed the time attributes (flexibility, time of day, working time, time-on-task) and academic performance for four learning activities (two individual and two collective). First we will present the results that compare academic performance, time flexibility, working time, and time-on-task. Second, we will focus on the impact of the time of day on performance in individual and collective activities.

Academic Performance, Time Flexibility, Working Time, and Time-on-Task

For the first hypothesis (an overall positive relation between the time-on-task devoted by students and their academic performance), we observed a slight correlation between the time-on-task devoted by students on a weekly basis and their academic performance (r = .31). A greater correlation was observed with the number of hours devoted to their professional activity (r = .77) and especially the degree of time flexibility (r = .98). Time flexibility was more significantly related to collaborative activity grades (r = .91) than it was to individual activity grades (r = .55).

Time of Day and Academic Performance in Individual and Collaborative Activities

The relation between the time of day and academic performances was tested for the second hypothesis (higher performance in individual and collaborative learning activities engaged in during the morning and weekend days). There were no significant differences regarding the time of day and academic performance, except the morning period. Students who were able to work in the morning obtained the best overall grades (r = .87). Considering only individual activity grades, we found that morning study was related to the best grades (r = .93) but that evening availability was also closely related to academic performance (r = .83). In collaborative activity, grades we observed for learning activities done in the morning were related only moderately to academic performance (r = .46), while evening time availability was more significantly related (r = .59).
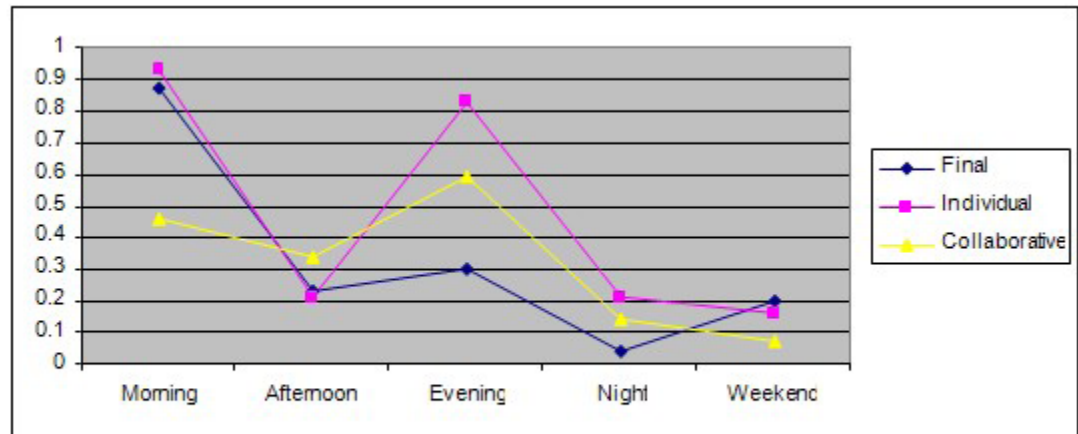
Figure 1. The impact of study at different times of the day on final grades, individual activity grades, and collaborative activity grades.

Discussion and Conclusion

Time flexibility in e-learning can be considered from either an instructional or student-centred perspective. Time flexibility is reduced by increased course and activity structure, collaborative learning and, particularly, synchronic communication. Students' time flexibility, understood as the capacity to spend time-on-task at different times of the day and week, is reduced by their professional, social, and family commitments. In this study, we observed that students' time flexibility, defined as the number of different times a student could engage in the learning activity in a day, was the most relevant factor. Students who were able to work in the morning obtained the best overall grades (r = .87), especially in individual activities. This finding could be viewed from the perspective of the quality of student time, which is better in the morning (Baddeley, Hatter, Scott, & Snashall, 1970; Goldstein, Hahn, Hasher, Wiprzycka, & Zelazo, 2007). However, we also observed a close relationship between the evening time slot and better academic performance in collaborative activities. For adult learners who work during the day, the time when most are available for learning activities is in the evening and on weekends (Kasprzak & Nixon, 2004), but only a minority of the e-learners taking part in the course said that they were available on the weekend. The greatest shared availability is, therefore, in the evening. We analyzed this evening orientation from the point of view of synchronicity. Even when the task required no synchronicity per se, part of the collaborative work done by the students included synchronous discussions, mainly carried out via the instant messaging tools provided by the virtual campus. We observed that although the time slot most closely related to strong academic performance is the morning, which provides high-quality learning time, the availability of low-quality evening time is also closely related to strong performance in collaborative activities.

Considering that the morning is the highest quality time and the most closely related to strong academic performance, educators should consider raising awareness about these findings among students and promote either their use of time available on the weekend or a change in professional and social activities to enable them to devote a greater part of their time in the morning to study. In the case of collaborative learning, we should help students to organize and regulate their exchanges asynchronously in order to avoid synchronous meetings in the evening, even if this is the most readily available time for the group. Ensuring quality time for e-learning might therefore reduce time flexibility and increase asynchronicity while raising student awareness about the need to use quality time both for their individual and collaborative activities. Increasing quality in e-learning also raises the quality of students' time devoted to learning activities in general. Finally, in future studies examining time-on-task in e-learning, we should consider not only the effects of online learners' quality time allocation in their performances but also the overall increase in online learning satisfaction.

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Beginning Course Surveys: Bridges for Knowing and Bridges for Being

David Starr-Glass
University of Maryland University College, European Division

Abstract

The use of a participant survey, administered at the outset of an online course, can provide information useful in the management of the learning environment and in its subsequent redesign. Such information can clarify participants' prior experience, expectations, and demographics. But the very act of enquiring about the learner also signals the instructor's social presence, relational interest, and desire to enter into an authentic dialogue. This study examines the use of participant surveys in online management courses. The first section discusses the informational bridges that this instrument provides. The second section considers survey responses to open-ended questions dealing with student sentiments. This analysis suggests that the survey plays a valuable part in accentuating social presence and in initiating relational bridges with participants.

Keywords: Instructional design; instructional management; social presence; learner engagement; relational dialogue

Introduction

Benjamin Kehrwald (2008) reminds us that "although technology gets much of the attention in online learning, it is people who make online learning environments productive" (p. 99). While technology provides opportunities and sets structural constraints, the effective design and management of online instructional systems requires an understanding of, and engagement with, those who participate in them. Yet, it is all too easy for the designer/instructor to forget that the distant learner is unique and that a new cohort of students can differ significantly from the previous one. Rogers, Graham, and Mayes (2007) make the point that instructors and instructional designers often assume that "the learner is a lot

more like himself or herself than they in reality are... [and] seriously underestimate how important the differences in context are" (p. 212). These natural but erroneous assumptions may have serious consequences on the effectiveness of the learning environments that are created.

In order to make online environments productive, instructors need to be more aware of the uniqueness of participants and to engage with them as authentic, legitimate learners. Rogers, Graham, and Mayes (2007), considering cross-cultural online contexts, also develop a metaphor of bridge-building to highlight acknowledging learner difference, reaching out to that uniqueness, and facilitating exchange opportunities between instructors and their students. The bridge-building metaphor is a central image in the present study. The key question is: How can informational and relational bridges between an instructor and online participants be constructed?

This study examines the use of a participant survey, administered at the beginning of an online course. The Course Participant Survey (CPS) serves two distinct purposes. First, it collects data that might subsequently be useful in managing and redesigning the online learning environment. This might be considered the passive role of the CPS. Second, the CPS demonstrates social (instructor) presence and relational interest and provides an early structure for student response and communication. This is the active, relational role of the survey. The CPS is easily constructed and administered; yet despite—or perhaps because of—its simplicity, it can play a significant role in establishing informational and relational bridges between instructor and student.

The first section of this paper examines the informational aspect of the CPS, looking at the kinds of information that can be collected and the uses to which they might be put. This aspect of participant surveys is useful, fairly obvious, and essentially passive in nature. The second section, however, explores a less obvious and more interactive function of the CPS. It is suggested that asking students directly about themselves, their experiences, and their thoughts at the outset of an online course signals instructor interest, concern, and social presence. An analysis of student responses, taken from a number of online courses, indicates that the CPS confirms social presence and is used by students to acknowledge and respond to feelings of social co-presence, psychological involvement, and relational behavior.

Bridges for Knowing: Facts and Demographics

At the beginning of each online course, the author asks each student to complete The Course Participant Survey (CPS). The survey consists of two types of questions. Those at the beginning require simple statements of fact: amount of prior online experience, computer and technological competence, work and supervisory experience, organizational experience and exposure, and the time budget allotted for coursework. These questions seek broad demographic information. They acknowledge attributes of the course participants but in a neutral, statistical manner. In the second section of the CPS, open-ended questions invite participants to make personal statements and disclosures. These might include reasons for

course enrollment; anticipated benefits of the course, long-term career and educational goals, and personal feelings and concerns on starting the course. The final question in this section invites participants to share any additional information they consider relevant. An example of the CPS is shown in Appendix A.

The Course Participant Survey is designed to obtain statistical, demographic, and educational information that the instructor considers relevant to the educational experience. Careful thought and ethical concern should be given to all stages of the survey process, including the nature of the questions posed, data storage, confidentiality, and use. The demographic information collected at the beginning of the course significantly increases the instructor's awareness of students as individual and authentic participants in the learning experience and provides the opportunity to consider relevant characteristics of the cohort involved. Information obtained can serve multiple purposes in organizing and delivering the course, including in-process adjustment, course redesign, and informing strategies for cross-cultural sensitivity, diversity, and inclusion. These will now be briefly considered.

In-Process Adjustment

In-process adjustments are those made during the course. They represent departures from plan brought about by significant, unanticipated, intervening contingencies. A review of the information collected in the CPS may alert the instructor to learner opportunities and challenges that were not initially recognized. For instance, if the CPS indicates that the participants in an online management course possess higher levels of management experience than previous cohorts did, learning activities in the present course can be adjusted and retuned to capitalize on this new potential. Similarly, if the CPS indicates that the cohort is weak in distant learning skills or has little prior exposure to online study, in-process adjustments can be made to the instructor's role and to the management of the educational experience in areas such as assistance, support, and encouragement.

In-process adjustment ensures that variances between anticipated (planned) and actual (possible) performance are reduced. Such adjustments constitute natural responses to feedback in dynamic and evolving learning environments; however, they rely on the instructor's awareness and experience. As mentioned previously, instructors may be unaware of the unique characteristics of a particular student cohort or of the nature of the challenges and opportunities that those students bring to their learning. Changes in learning activities and assignments need to be considered and implemented at an early stage in the course. Information retrieved from the CPS can alert the instructor to possible revisions and changes even as the course begins.

For participants, the perceived effectiveness of an online learning environment correlates with their degree of engagement in it (Cho & Jonassen, 2009; Hill, Wiley, Nelson, & Han, 2004). One way of initiating higher levels of engagement is by fine-tuning learning activities and revising educational goals to better align them with students' prior experience, potential, and expectations. In-process adjustment creates an altered online learning environment, which participants can recognize as appropriate and challenging. This provides a basis for fuller and more effective participant engagement.

Course Redesign

Sometimes fine-tuning a course is insufficient: fundamental redesign is called for. Here, the analysis of course evaluations can be helpful in re-establishing appropriate educational goals, learning activities, course management, and anticipated outcomes. Reliance on end-of-course (summative) evaluations underscores the cyclical nature of designing and improving learning environments, in which actual learner experiences and accomplishments are elicited, interpreted, and acted upon to improve subsequent offerings of the course (Wiliam & Black, 1996).

The interpretation of summative evaluations, however, must be tempered by an informed appreciation of the nature and characteristics of those who have participated in the course. Gaps between anticipated and actual educational outcomes might indeed suggest a misalignment in the structure, content, and dynamics of the course. However, the variance might also be attributed in part to a significant shift in the course population. For example, poor performance results in the leadership module of a management course might indicate design problems with that module. An analysis of participants' prior experience, obtained from the CPS, might indicate that this particular student cohort had limited leadership experience compared with previous students who completed the course. The cohort under review has less personal experience on which to reflect, and thus less experience to incorporate into their learning. This cohort might be an exception: future course participants might have more leadership experience, similar to those in the past. In a different scenario, CPS data might show a trend in decreasing leadership exposure, which might suggest redesigning the course to recognize this trend.

Cultural Awareness and Inclusion

When engaging in cross-cultural situations, we often lack an understanding of what constitutes cultural difference and how to communicate effectively across boundaries of difference. The CPS is a useful vehicle for obtaining information about learners in cross-cultural, or culturally diverse, distant learning contexts. Distant learning has dissolved geographical and social boundaries but it has not eliminated cultural differences. Cultural assumptions can manifest in many aspects of the online environment: willingness or reluctance to contribute to conferences, communication styles, difficulty in understanding language, and the degree to which individuals are willing to work collaboratively (McLoughlin & Oliver, 2000; Wang, 2007).

Liu, Liu, Lee, and Magjuka (2010) suggest that a "culturally inclusive learning environment needs to consider diversity in course design in order to ensure full participation of the international students" (p. 187). Cultural difference, in terms of values and core attitudes, can be subtle and unanticipated. A fuller appreciation of cultural difference, and a commitment to cultural inclusiveness and diversity, permits more effective learning activities grounded in participants' cultural assumptions.

Course Participant Survey self-disclosure can sensitize the instructor to cultural issues. This has certainly been the author's (a Scot) experience in working with international students

from Central and Eastern Europe. Self-disclosure provided via the CPS has also been useful in working with military learners who are currently serving with the U.S. armed forces. Understanding the culture in which participants are embedded, and the specific concerns and difficulties that they face, is vital in designing and administering an effective online learning experience (Starr-Glass, 2011). The CPS, even at a symbolic level, indicates the instructor's willingness to listen to students as distinct individuals, to explore cultural assumptions, to construct bridges to span cultural gaps, and to create a diverse and inclusive learning space. It also allows students to share information that they might not otherwise have shared.

Literature Review: Social Presence in Online Learning Environments

Participant surveys provide a simple but useful bridge for the flow of information that might have an impact on the learning environment. In the second section of this paper, another aspect of the CPS is considered: the bridges between learners and instructors that allow for the development and expression of social presence and associated behavior.

Short, Williams, and Christie (1976) originally defined social presence as "the degree of salience of the other person in a mediated interaction and the consequent salience of the interpersonal interaction" (p. 65). Subsequent definitions, sometimes applied to the nature and richness of the communication medium itself and sometimes attributed to those using it, have usually embodied these original aspects. Gunawardena and Zittle (1997), for example, produced a working definition that has proved succinct, enduring, and useful: social presence is "the degree to which a person is perceived as a 'real person' in mediated communication" (p. 9).

Drawing on an extensive review of the literature, Frank Biocca and others (Biocca, Harms, & Burgoon, 2003; Harms & Biocca, 2004) considered the complexity and confusion that has persisted around the existence, measurement, and effect of social presence in mediated communication. They suggest three distinct, but related, dimensions within social presence.

1. **Co-presence:** An aspect of social presence in which the individual senses that he/she is not alone or isolated, is aware of the presence of an "other," and believes that others are aware of him/her.

2. **Psychological involvement:** A higher level of social presence in which the individual focuses attention, empathizes, responds to feelings, and considers that he/she is aware of the intentions, motivations, and thoughts of others.

3. **Behavioral engagement:** An even higher manifestation of social presence where the individual believes that his/her actions are interdependent, related, connected, and responsive to the "other" and that the "other" recognizes and reciprocates this responsiveness.

Psychological involvement is initiated when there is an appreciation of the presence of other psychological and social actors possessing cognitive and affective dispositions. When personal knowledge is not exchanged in distant learning environments, social presence and psychological involvement are inevitably compromised. This can lead to reduced learning opportunities and diminished satisfaction in online learning environments for both students and those who instruct them (Richardson & Swan, 2003; Swan & Shih, 2005). As Robert Starratt (2004) puts it,

> ...we cannot be present to the other if the other is not present to us; the other's presence must somehow say this is who I am .... [B]eing present disposes one to act in response to the other, due to the knowledge communicated by mutual presence of one to the other. (p. 87–88)

A significant issue in "being present" online is the presentation of self by the instructor. The instructor, by assuming different roles and personas, can encourage and support exchange among students by confirming, validating, challenging, probing, or conceding a personal lack of knowledge. These efforts can either accentuate "instructor presence" or be directed towards encouraging all online participants to recognize and project their own social presence (Starr-Glass, 2009). Dennen (2007) has indicated that "the skilled facilitator can influence positioning of both self and others, and thus may use positioning in the performative sense as an instructional intervention" (p. 105). Fluid and dynamic social positioning by the instructor develops a more robust social presence that can stimulate not only the psychological involvement but also the authentic engagement of others and increase the degree to which they consider their virtual learning space to be populated by other cognitive, social, and salient learners.

The quality of "being present" is also reflected in the construct of immediacy (Mehrabian, 1967; Wiener & Mehrabian, 1968). Instructor immediacy is understood to include demonstrating a sense of a unique person, expressing emotion, and relating responses appropriately to the needs of participants. Immediacy contributes to, and is in turn encouraged by, higher levels of social presence and psychological involvement (Schutt, Allen, & Laumakis, 2009). In online instructional practice, it has been demonstrated that perceived instructor immediacy can be significantly increased by actions such as providing timely and active student feedback; indeed, both faculty and students seem to agree that this manifestation of immediacy is highly significant in effective online instructors (Bailie, 2011).

Yet another construct associated with psychological involvement and behavioral engagement is authenticity. Authenticity is the quality and extent of personal disclosure. Cranton (2001) defines it as "the expression of the genuine self," while Brookfield (1997) sees it as a demonstrated consistency and congruence between espoused values and subsequent action. Authenticity not only signals cognitive and affective presence, it also invites interaction. It may well contribute to, and be reinforced by, relational engagement. Dalhberg, Dalhberg, and Nyström (2008) understand relational engagement as a process that is an

"open discovering way of being ... [the] capacity to be surprised and sensitive to the unpredicted and unexpected ... vulnerable engagement ... disinterested attentiveness" (p. 98). They also understand relational engagement to include an openness that is "the mark of true willingness to listen, see, and understand ... [I]t involves respect ... sensitivity, and flexibility" (p. 98).

Social presence, and the constructs associated with it, has a significant impact in distant learning environments. Social presence has been shown to correlate positively with overall participant satisfaction (Gunawardena & Zittle, 1996; 1997). It has also been found to increase participant activity and online interaction (Tu, 2000; Tu, 2002; Tu & McIsaac, 2002). In online discussions, higher levels of social presence are associated with a deeper and richer quality of exchanges (Swan, 2001; Swan & Shih, 2005). Quality of interaction seems to be increased because participants come to an appreciation that they are dealing with "real persons" within the mediated communication environment (Aragon, 2003; Kehrwald, 2010; Maor, 2003). There is also evidence to suggest that social presence contributes to social bonding and a nascent sense of community online (Shin, 2002; Wise, Chang, Duffy, & Del Valle, 2004).

Bridges for Being: Impact of the Course Participant Survey

The Course Participant Survey (CPS) is routinely sent to every student at the beginning of the author's online courses. The courses deal with management theory and organizational design, and, as such, predominantly attract business administration majors. The majority of students are currently serving in the U.S. military, living in Europe or deployed in Iraq or Afghanistan. A previous survey of this population indicates that enrolled students have considerable prior online distant learning experience (mean 4.7 courses; mode 2.0) and long service records (mean 12.2 years; mode 10.0).

This study focuses on a single open-ended question inserted at the end of the CPS: "Is there anything else that you would like to share with me?" It was hypothesized that the question would convey the instructor's desire and invitation to enter into a dialogue—however partial or limited—regarding learner authenticity and legitimacy: recognition of the learner as a "real person."

Sample

Course Participant Survey information was requested from students in five sections (winter 2010 and spring 2011) of an online course in management theory and organizational design. The sample was opportunistic and included only students registered in the indicated sections. The generalizability of results to a wider cross-college population is therefore limited. The total enrollment for these five sections was 95, and 75 of these students returned a completed CPS. The high completion rate (79%) suggests strong interest. Students were informed that completion of the CPS was voluntary and would have no impact on their participation score for the course. CPS information was regarded as confidential (not shared

with other students or faculty) and was stored securely.

Analysis

Qualitative analysis of text responses was made without assumptions or imposed patterns. A phenomenological perspective was adopted, in which individual responses were understood to be the products "of how people interpret their world, … grasp the meanings of a person's behavior, … [and] see things from that person's point of view" (Bogdan & Taylor, 1975, p. 14). The analysis tried to "describe, decode, translate, and otherwise come to terms with the meaning, not the frequency, of certain more or less naturally occurring phenomena in the social world" (Van Maanen, 1983, p. 9). It was considered that such an analytical approach would reveal fragmentary insights and emergent themes within the surveys analyzed (Adams & Schvaneveldt, 1985; Shaffir & Stebbins, 1991).

The degree to which social presence, immediacy, and authenticity was evidenced was determined subjectively using theoretical frameworks informed by the literature reviewed above. Lower levels of social presence (co-presence) were characterized as general statements, which conveyed little about the writer. Increasing degrees of social presence (psychological involvement and behavioral engagement) were characterized by higher levels of immediacy, authenticity, and the suggestion of proto-relational engagement. Generally, these responses were longer and more elaborate, communicated specific personal concerns or dispositions, served as presentations of self, and often suggested a desire for the instructor's response or recognition.

Results

Five emergent themes were identified among student responses. These were labeled general pleasantries; initial difficulties; pervasive problems; ethos, spirit, and attitude; and existential projections. Figure 1 indicates the suggested manner in which these themes relate to increasing levels of social presence and constructs such as immediacy, authenticity, and relational engagement.
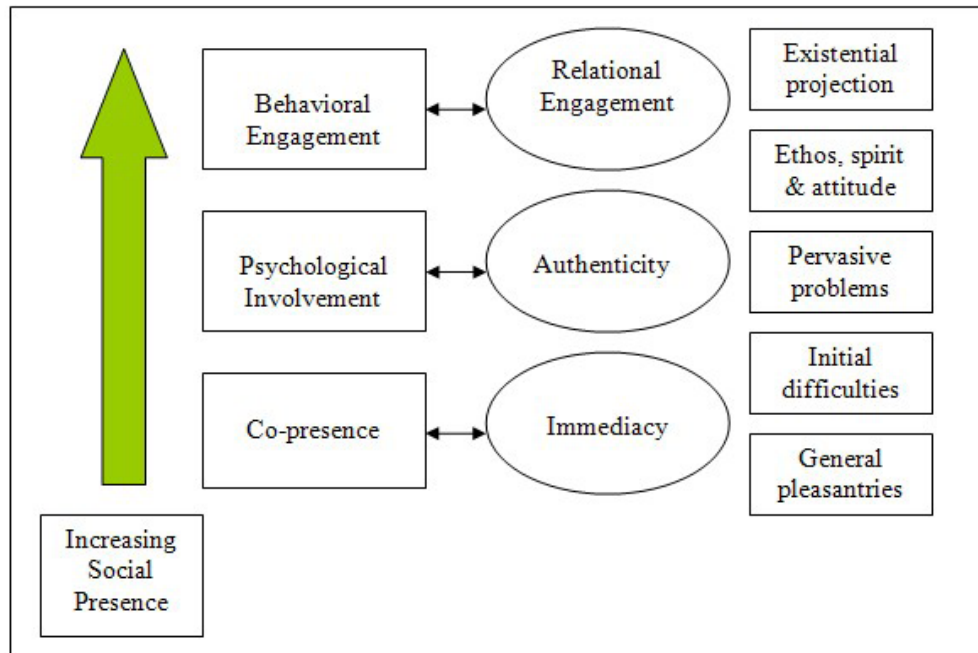
Figure 1. Dimensions associated with increasing social presence; the position of constructs such as immediacy, authenticity, and relational engagement; and the relative position of the five emergent themes in the analysis.

Theme I: General pleasantries.

Some students simply noted that they had "nothing to add at this moment." Others added generalized pleasantries, which were typically optimistic, enthusiastic, and forward-looking. These responses were formulaic in nature, indicating a sense of recognition and respect, but lacked significant personal disclosure. These were considered to represent recognition of social presence in terms of co-presence but did not exhibit psychological involvement and relational engagement.

Theme II: Initial difficulties.

These responses provided additional personal information focused on perceived short-term difficulties. Whether the nature of the identified difficulty was imminent childbirth, extended temporary or redeployment duty with the military, a sense of having been away from school for too long, or unfamiliarity with online coursework, respondents expected that these would be overcome as the course progressed.

These responses reflected commitment to the course and served a pragmatic purpose of alerting the instructor to impending difficulties. In these responses, social presence was evidenced as co-presence; the explanation of immediate and pragmatic concerns was taken as a developing psychological involvement with the new course and with its participants. Relational engagement was not judged to be present in these responses.

Theme III: Pervasive problems.

These responses presented more extended student concerns that might be significant throughout the course. Items identified ranged from acute shyness, learning disabilities, low self-confidence and educational esteem, and migraine attacks to the use of English as a second language. Several considerations are important.

First, none of these disclosures subsequently appeared in online interactions and would not have been otherwise shared with the instructor. Sensitivity to disclosure, lack of a contextual framework, personal awkwardness, and potential embarrassment within the broader learning community undoubtedly account for much of this non-disclosure. Second, these responses expressed a considerable degree of personal trust. Phrases such as "you are the first instructor that I told about my learning disability"; "because I am afraid of sounding too uneducated"; and "I apologize, but I'm trying my very best to improve my writing skills" all attest to this.

These responses focused on what were perceived as pervasive problems, and, as such, recognized a longer-term impact on the learning outcomes and a longer-term relationship with the instructor. The focus was more on communicating a personal position than on negotiating a course-related issue. This was judged as constituting a high level of psychological involvement and a more developed sense of trust and confidence that move in the direction of relational engagement.

Theme IV: Ethos, spirit, and attitude.

While responses in the previous cluster suggested a beginning of trust, this group assumed that trust was already part of the exchange. Here, the important point was the communication of values that helped to define the writer and to consolidate a unique social actor. This cluster of responses demonstrated a willingness to enter into an authentic exchange, revealing trust and empathy. One of the respondents likened it to providing a "bit of a window into who I am."

In passing, it might be significant to note that the same respondent also wrote, "this is the most I've ever 'conversed' with a Professor." This is an interesting comment for a student who has already completed a number of online courses, and perhaps it speaks to the lack of opportunity for conversations—relational and authentic exchanges—in many of her prior online learning environments.

Theme V: Existential projections.

These expressions were similar to those in the last cluster; however, they were characterized by deeper existential concerns in the students' lives, or presentations of self. Here, students communicated many things: acceptance of heavy work commitments moderated by a sense of belief in personal capacity and need; concerns about separation from the military and entering an unknown civilian labor market; and the importance of family and the commitment to intercultural values.

These students were not simply articulating positions but had accepted the instructor's question as a legitimate inquiry into their personal lives. These responses evidenced not only trust in the exchange partner but invited further comment. That anticipated, or inferred, discussion was not necessarily seen as being confined to the online learning environment. This group of responses was understood to present the highest level of relational exchange behavior.

All student responses were categorized under one of the five headings. Table 1 shows the relative distribution of the emergent themes obtained from the analysis. It also shows excerpts from individual student responses to illustrate the themes identified. While the selection of these excerpts is subjective, it is considered that they do provide a representative sense of the five themes identified and serve as anchors to define each of those themes.

Table 1

Emergent Themes, Relative Frequencies, and Representative Excerpts from Student Responses

Theme	Frequency (N = 75)	Examples of typical responses
No response	7 (9%)	(Not applicable)
General pleasantries	34 (46%)	I have been told that this was a good class . . . so I am looking forward to it. Very excited to start class and I love to learn Thank you for trying to get to know us a bit more
Initial difficulties	7 (9%)	Although I will be having my baby soon … I do not foresee this being a challenge in my class participation. I fully plan on being able to continue my classes while on maternity leave. I'm highly motivated, been a couple of years since I was in school though so might take me a little while to get caught up. I have not worked in an online classroom for a long time so I am a little worried if I am doing everything according to your instructions.

Pervasive problems	11 (15%)	I am very shy that's one other reason why I continued to do online classes. You are the first instructor that I told about my learning disability in high school. When I was a baby and young child I had ear problem that affected my hearing and speech. I have yet to ask for special treatment and I hope I will not have to. So thank you for understanding. I have a difficult time with writing and take a long time finishing projects because I am afraid of sounding too uneducated. I end up re-writing papers several times before submitting them. I think this is from growing up somewhat secluded on a small family farm and was just one of 14 in my graduating high school class. I think this is also the reason that I have a low self confidence. English is my third language. If my grammar or my explanation is not clear, I apologize, but I'm trying my very best to improve my writing skills.
Ethos, spirit, and attitude	7 (9%)	I always knew that an education was important growing up, I thought I could be as successful as my father is without a degree. Currently I am living in Germany with my 3 children, while my husband is in the U.S. We chose this, because we think it is important to expose our children to different cultures and lifestyles. They attend German school. It hasn't been easy to juggle work, school, and marriage but most good things in life come with hard work. I hope this has given you a bit of a window into who I am…I must say, this is the most I've ever 'conversed' with a Professor.

Existential projections	9 (12%)	I'm home after 15 yrs away with my husband and kids.... I know that taking 3 courses will be a huge commitment on my part ... I have to believe in myself ... Attitude is everything. I need to be positive and hold down to that. My husband is a Seabee, so his motto is CAN DO; I guess that will be mine as well. My contract ends in March 2012 and I'm a bit nervous about the prospects of life outside the military. I've lived in Germany for so long with other military people that I'm out of touch with the civilian job market and structure. I think family is what is most important to me and I'm sacrificing my time working in Iraq so we can spend more time together when we move to Florida. I spent 21 years in the military and loved every minute of it. My family got the opportunity to travel the world (Guam, Spain, Turkey) and they are much better for it as well.

Conclusion

This study indicates that at the beginning of one particular online learning experience, the majority of students (79%) responded to a voluntary survey, and, of these, almost all (91%) acknowledged some degree of social presence. Approximately half of these responses (55%) could be regarded as formulaic, demonstrating general social courtesy and pleasantry. These indicated a significant sense of online social presence, in which respondents appreciated that they were not alone or isolated and that there was a mutual focus of attention and interest between "real" persons: co-presence.

The other half (45%) of the responses demonstrated increasing levels of social presence evidenced as strengthening co-presence, psychological involvement, and the beginnings of relational behavior (ranging from "initial difficulties" to "existential projections"). Respondents took the opportunity presented by the CPS to initiate communication and exchanges with the instructor that did not simply relate to the operation of the course but which provided openings into their dispositions, attitudes, and worldviews.

It is suggested that the CPS acts in two different but connected ways. First, it serves instrumentally as an instructor initiative for heightening social presence at the outset of an online course. Here, it figures as one of a number of instructor-centered tactics and strategies deliberately employed to stimulate social presence and make it a salient feature of the learning environment. Second, the CPS can be understood from the student's perspective as a

channel for communicating his/her awareness of social presence. By replying, almost all students indicated that they recognized and wished to respond to an "other" acknowledged as present in the computer-mediated environment. Half of those who responded took the opportunity to demonstrate a higher awareness of social presence and a willingness to engage with a considerable degree of personal authenticity. This level of social presence, it is suggested, would have remained unappreciated had it not been for the opportunity that the CPS provided.

Discussion

This study does not infer a causal relationship between the administration of the CPS and social presence encountered in the learning environment. Indeed, a confounding factor in making such an inference is that the author characteristically begins new online learning experiences with a high display of social (instructor) presence. The level of personal disclosure may be spurred by this context rather than by the administration of the CPS. The CPS is a way of making social presence salient and evident, and its impact cannot be easily isolated from other structural components of the learning environment that are designed to increase and develop a sense of presence.

The Course Participant Survey, administered at the beginning of a new course, provides an opportunity to learn more about the students entering the learning environment and to accentuate relational exchanges. As the course progresses, participants will contribute to online conferences, share information, exchange opinions, and develop a more acute awareness of the presence of their instructor and peers. Certainly, in creating and sustaining the social dynamics of effective learning environments, instructors can rely on the cues and clues of participants' online texts. Yet often, critical issues for the individual student, as well as for the collective, are not broached or disclosed publicly. They may be revealed and shared in the privacy of the CPS.

Social presence is a shared property of a computer-mediated communication environment and is recognized and appreciated at different levels by each participant. The instructor is uniquely placed to alter structures and dynamics in order to enhance and sustain social presence; however, he/she is not unique in contributing to social presence. The characteristics of participants are also significant (Mykota & Duncan, 2007). All participants, certainly students within online learning environments, appreciate social presence and use various strategies to improve its quality (Rourke, Anderson, Garrison, & Archer, 1999). In situations where instructors strive to create social presence, this study underscores the level and quality of social presence that exists, albeit latent and unexpressed, even at the outset of online courses.

The high levels of social presence revealed by this study in terms of co-presence, psychological involvement, and behavioral engagement indicate that the CPS is a simple but effective way of eliciting connections between instructor and participants. The CPS is understood as part of an array of tactics and strategies designed to create and strengthen social presence

in online environments, rather than as a unique and isolated approach. The CPS provides opportunities for social exchanges that are not witnessed in general online discussions. The participant survey can also be understood as a means of sampling, or confirming, the degree to which social presence is part of the beginning online environment.

While the CPS seems to provide a useful way for creating informational and relational bridges, the limitations of this study should also be acknowledged and considered. These limits include the restricted undergraduate student sample used, subjective assessments used in defining and operationalizing social presence and other constructs, and the analysis of the data collected. More research might provide valuable information about ways in which CPS data can impact the design, decision-making, pedagogical strategies, and learning tactics of the course. Research is required to explore the links between the use of the CPS and subsequent social presence, authenticity, and interaction depth of online dialogue and exchange.

In the meantime, online instructors might consider the advantages and merits of beginning course surveys and see whether such instruments can serve a useful role in their own practice. In efforts to create online learning environments that are built around students, and not instructors or designers, it is critical to construct bridges that facilitate the exchange of information and the sharing of presence. In that, the pre-course participant survey seems to have a significant role.

Acknowledgements

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APPENDIX A

Class Participation Survey

As we start the course, I would like to know something about you, your educational and career goals, and your present level of knowledge and skills. Information you provide will be treated in confidence and not shared with anyone else. Information you choose to give helps me facilitate this course in ways that might help you learn more effectively and fulfill your educational goals and aspirations.

This assignment will not be graded or used to determine participation.

- Name:

- Current geographic location:

- If employed, what is your job title?

- What is your academic major?

- Have you taken previous online courses?

- If so, which courses were these?

- Do you enjoy working with computers and exploring the Internet?

- Which type of computer system do you use? PC __ Macintosh __?

- How would you rate your present word-processor experience?

- Do you have work experience? If yes, please briefly note positions and responsibilities.

- Do you enjoy learning by yourself (online)?

- Do you enjoy learning with others (in a classroom)?

- How much time do you think you will budget for this course per week?

- Why are you taking this course?

- What benefit do you expect to obtain from completing this course?

- How do you feel starting this course?

- What are your long-term career goals?

- Is there anything else that you would like to share with me?

Athabasca University

Book Review - The Impact of E-Learning Programs on the Internationalization of the University
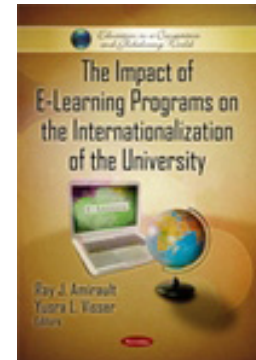
Reviewer: Nataly Tcherepashenets, State University of New York, USA

While I was preparing the grant application for a project that involves international collaboration in online learning and teaching, I came across a book titled *The Impact of E-learning Programs on the Internationalization of the University* by Ray J. Amarault and Yusra L. Visser, both scholars in the field of educational technology and research at Florida Atlantic University. This insightful book includes seven engaging chapters which combine the historical, educational, and technological dimensions of internationalization to address the potential impact of web-based e-learning.

In the introduction, the authors contend that internationalization has been a top priority for higher education from the time of the university's inception, and it is one of the key mechanisms responsible for the institution's enduring achievements. In the first chapter, Amarault and Visser introduce university internationalization as a subject of research. In the second, "Defining 'Internationalization,'" they note a correlation between the growing interest in internationalization as an educational process and the development of web-based e-learning, both of which have a codependent relationship with globalization. After providing some history about internationalization, whose success has been primarily driven by the mobility of faculty and students, the authors analyze the impact of technology, or the "technology revolution" (p. 17), on the recent internationalization efforts in higher education.

As the researchers aptly demonstrate in chapters 3–5, the emergence of web-based e-learning in the late twentieth century created the potential for internationalization within the university. However, it is no small task to take full advantage of this possibility. A central question emerges:

> Has this historic shift towards web-based e-learning actually *increased* internationalization within the university by allowing greater cross-national student and faculty participation, or has it rather *decreased* internationalization by eliminating the traditional requirement for face-to-face meetings within classrooms, where the effects of direct human interaction might be most keenly felt? (p. vii–viii)

There is no simple answer to this question. In chapters 6 and 7, the authors analyze seven factors present in web-based e-learning which, in their opinion, may have a positive impact on internationalization within the university. These are (1) faculty role, (2) student role, (3) student and faculty migration, (4) community and cultural context, (5) availability of knowledge and information, (6) educational access, and (7) instructional strategies. Amarault and Visser suggest that in order to enhance internationalization in the online environment, faculty members should be open to taking on the role of facilitators. In this role, they must possess strong writing skills and be willing to assist students of various ethnic, cultural, and linguistic backgrounds to develop cognitive and metacognitive skills. Faculty participation in online course design acquires major importance, along with subject matter expertise. The collaborative engagement of students can be a very positive factor particularly when there is an opportunity for interaction between individuals from different cultural backgrounds, which may contribute to internationalization. Amarault and Visser correctly observe that in the best of cases, these "differences can be viewed as strengths on which to capitalize in the online environment" (p. 27).

Although web-based e-learning reduces faculty and student migration, the approach can have a positive impact on internationalization. This can be achieved, for example, with online communication between people from different countries. Many interdisciplinary and interinstitutional collaborations can be facilitated by the affordances of advanced communication technology. The success of this process is also determined by the learning management systems (LMS) in place, which shape both community and cultural contexts and can either enhance or impede internationalization. And, as the authors point out, there is a continuing need to develop content that encompasses elements from a wide range of cultural, geographical, and political backgrounds. The fact that this knowledge and information is available through open access both in the original language and in translation contributes positively to internationalization.

Furthermore, in contrast to the traditional migration pattern, distance education can potentially be accessible to a wide variety of people because there is no need to relocate. Although the digital divide continues to exist (there are still billions of people around the globe without Internet access, as statistics illustrate), it is shrinking. For example, the number of Internet users worldwide in 2010 grew 444.8% in comparison to percentages from 2000 (see http://www.internetworldstats.com/). Amarault and Visser note another problem, which is Internet penetration. This varies significantly in some of the most heterogeneous regions

of the world. According to Internet World Statistics, as of June 2010, penetration rates are 77.4% in North America, 58.4% in Europe, and 10.9% in Africa. Despite these limitations, the increased access to the Internet that many populations have may support internationalization for the university.

Instructional strategies play a major role in promoting internationalization efforts. Amarault and Visser consider group-based activities, integrating of materials from a variety of cultural traditions and geographical regions, and interviews to be the most successful instructional strategies for enhancing internationalization. They mention specific technologies that support internationalization in virtually any academic subject, including online translation tools, Internet connection speeds capable of supporting real-time audiovisual communication, the emergence of cloud computing, and social networking.

In the final chapter, titled "Discussion," Amarault and Visser suggest that understanding the seven factors, which they described earlier, in light of Knight's scheme of internationalization (1999) can be instrumental to strategic planning for reaching internationalization goals. According to the authors, the impact of e-learning on students and faculty migration are aligned most closely with the *activity* approach of Knight's internationalization scheme, which focuses on curriculum, academic exchange, and international students. They see the modification of the roles of faculty and students as part of the *competency* approach, with its emphasis on knowledge, skills, and attitude development. The integration of digitally archived intellectual content from diverse regions into web-based learning links fits the *ethos* approach, which emphasizes culture or climate development that supports internationalization. Finally, Amarault and Visser view instructional strategies as being aligned with Knight's *process* approach, which stresses the integration of international elements into teaching, research, and service. In the same vein, one may notice strong connections between the seven factors and Knight's approaches to internationalization. These relationships should be taken into consideration when strategies for internationalization are developed.

The authors then move from analyzing the potential impact of web-based e-learning to the discussion of real situations and outstanding questions. They notice, for example, that web-based e-learning might filter out certain aspects of internationalization because the individuals using the required technology are working in a single language, and the textual communication does not transmit many of the features inherent in cross-cultural intercourse, such as accents, mannerisms, styles of verbal communication, and study and learning patterns. This can be addressed, according to the authors, by integrating audio and video streaming, a real-time audio and video connection between individuals in an online classroom. As this technology becomes more widely available, aspects of intercultural discourse between students and faculty will be improved. The wider implementation of this technology will increase the level of university internationalization through e-learning. It requires a careful and systematic approach that must be factored into long-term strategies.

Although distance learning was ranked at the bottom of the list among internationalization policies and practices by the International Association of Universities in 2006, it was placed

among the key areas for new development within internationalization in a 2003 IAU global report. As Amarault and Visser correctly conclude, the lack of consensus over this period of time exemplifies the uncertainty many feel about the role of distance learning in internationalization processes. The authors suggest that web-based e-learning has the potential to increase internationalization. This can be achieved, for example, through the purposeful implementation of strategic policies which count internationalization through distance learning among the major institutional goals of the university.

In conclusion, Amarault and Visser view web-based e-learning as instrumental for achieving internationalization outcomes if a deliberate, systematic, and proactive approach is taken to reach that goal. A clear statement of internationalization goals, an understanding of the technology affordances, and the implementation of targeted instructional strategies are the necessary steps in order to ensure a true internationalization experience in the twenty-first century university's virtual world. This interdisciplinary book offers an innovative look at internationalization and the role of distance learning in this process by incorporating historical, educational, and technological perspectives. It will be of interest to a broad audience of researchers and practitioners in online learning, particularly those who are planning to contribute to their institution's internationalization efforts.