Online Learning for Social Constructivism: Creating a Conducive Environment

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Abstract*: On-line learning is a process which is facilitated through the use of the Internet and the World Wide Web. It has the potential for stimulating learning on a social constructivist paradigm given the wide range of applications available on the Internet and the web. The social constructivist paradigm is associated with creative thinking and problem solving through collaborative learning. In spite of this, problems related to the practice act as impediments to effective on-line learning in some higher education institutions. This integrative literature review examines the findings of qualitative research articles regarding impediments to effective on-line learning. Five primary research articles published between 2000 and 2010 serve as the source of data for the study and recommendations based on literature are presented as possible solutions to the identified problems. The article used as its theoretical basis Garrison's Community of Inquiry. The study makes recommendations that may address the problems prevalent in the practice of on-line learning. These recommendations may serve as a marker for academic planners and policy makers who are involved with the creation of effective on-line learning environments.*

Key words: on-line learning, social constructivism, impediments to effective on-line learning, community of inquiry

INTRODUCTION

The need for continuous skills development has resulted in a growth in demand for quality higher education which exceeds supply offered via conventional face-to-face higher institutions of learning. As a result, many higher education institutions around the globe are adopting on-line learning as a workable means to addressing this growing demand (Harry and Perraton, 2003). Online learning as a means of stimulating higher thinking through the social constructivist paradigm; social constructivists contend that learning occurs through collaboration and interaction amongst learners and their peers as well as their instructors. This paradigm is seen as a viable means through which quality education can be made accessible to a large number of marginalised students (Richards and Tangney 2008; Kirby *et al*., 2008). Online learning as a component of blended learning, has the possibility of achieving learning outcomes (Maley *et al*., 2008). Despite its potential benefits to education, problems exist in the practice of online learning which act as impediments to the achievement of desired learning outcomes. Though studies have highlighted existant problems (Rich *et al*., 1997; Chavez *et al.,* 2002; Wellman and Larson 2002), these studies have not investigated these problems from the theoretical standpoint of the community of inquiry, Garrison *et al.,* (2000). As a prelude to the methodology employed to carry out this study, social constructivism is presented followed by the community of inquiry which serves as the theoretical basis of this article.

Social constructivism, has its roots in the work of Piaget (1972), and emphasizes the role collaboration and interaction with the environment, the learner's peers and others, plays in

the learning process. This learning paradigm, which posits that learning occurs through the internal construction of knowledge, occurs through experiences gained by the learner and the learner's social interactions. The main proponents of this type of learning are Vygotski (1962), a Russian psychologist who lived in the late 1800s and early 1900s, and Bruner (1996), an American cognitive researcher. Social constructivism places emphasis on dialogue, as a means through which ideas are considered, shared and developed (Pritchard, 2005). Furthermore, social constructivism is compatible with cognitive theory which emphasizes higher mental functions in the learning process such as problem solving, concept formation and decision making.

According to cognitive school of thought, had man not been able to develop high thinking skills in order to solve problems we would have long been extinct (Bruner 1997). Through amplification of man's motor capacities through higher order thinking, humans could for example, lift heavier weights, travel further and faster, be able to build better shelter and lessen their vulnerability to predators and natural catastrophes. Sensory capabilities were similarly amplified by the invention of audio visual technology (Lefrancois, 2006). The third stage of mental evolution incorporated the use of technologies for the enhancement of human intellectual capacities through the use of symbols and theories and these include computer languages and systems (Bruner, 1997). Symbolic representation is described by Newell (1990) as essential for sharing of knowledge between people. This symbolic representation may be achieved through the means of on-line learning.

On-line learning as a means through which social construction may occur, allows for both asynchronous and/or synchronous collaboration through video conferencing, chat rooms, blogs, discussion boards, etc. This form of learning is considered a necessity today given the type of students populating our educational institutions. These are students who are techno-savvy and rely heavily on on-line social networking to communicate with each other and to access the latest information and trends. This current group of students defined by Kennedy *et al*. (2007) as the 'Net Generation' are described as being born between 1980 and 1994 and as being consumers as well as producers of information (Chang 2006; Towers *et al*., 2005). It is therefore necessary, according to Prensky (2001) for educators to tailor their teaching to match the skills, experiences and expectations of their 'digital native' students, while at the same time not compromising on the quality of the teaching. Various theories regarding quality online education elements exist such as the connectivist theory (Siemens 2004). However, for purposes of this study the community of inquiry presented by Garrison *et al.,* (2000) was the focus.

Garrison *et al*. (2000) developed a theory on the various components necessary for effective on-line learning to occur social constructively. Their model emphasizes a community of inquiry consisting of three presences which should be in place in any online learning environment. The three presences are; the cognitive presence, the social presence and the teaching presence (Figure 1). The evidence of these presences lies in the postings which appear in on-line learning dialogues.

The three presences in a community of inquiry play a complementary role in the learning process, although according to Garrison *et al.* (2000), the cognitive presence is considered the most important. However, in cases where the affective domain is a very essential part of the whole learning experience, social presence contributes immensely to the learning objectives.

Cognitive presence is considered the most important presence in an online learning environment as it forms the core of the learning process and comprises learning content. Garrison *et al.*(2000), argue that the cognitive presence is the most essential element for higher order thinking as it is a vital element in critical thinking as it refers to the extent to which learners are able to construct meaning through sustained communication with their peers and their lecturers.

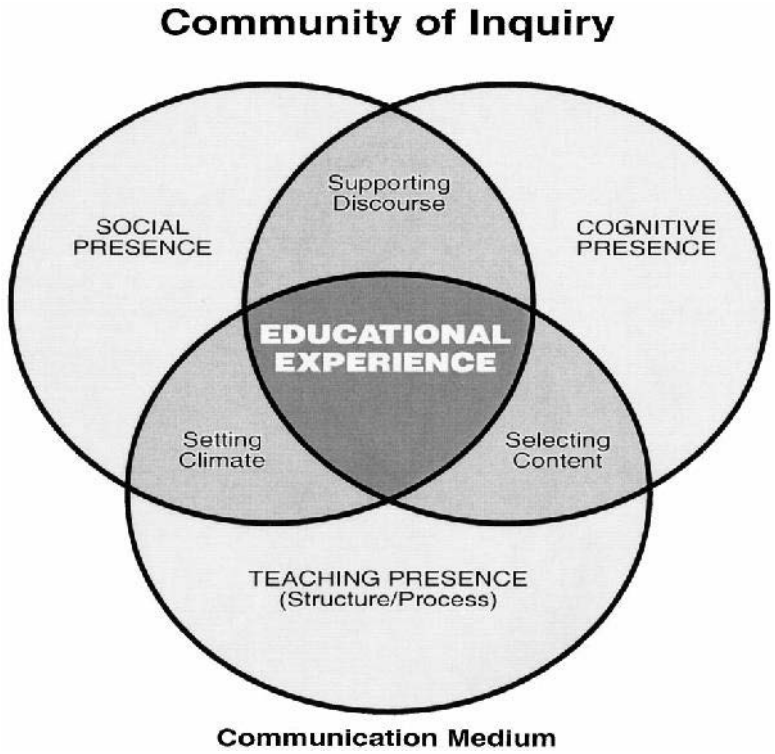

Figure 1: Elements of an Educational Experience

Effective learning is known to occur in an environment which allows for the student to be able to assert his individualism and communicate with his peers and instructor as an independent thinker (Stubbs, 1976). As social beings, human learning occurs through one's social interactions throughout the ages. In an online learning environment, direct communication is interceded by the use of on-line technology such as the computer. Social presence is believed to positively affect learning outcomes by increasing student satisfaction and motivation through enhancement of the affective domain of learning (Richardson and Swan 2003; Swan and Shih, 2005). The ability of the on-line learner to be seen as an individual in a virtual on-line environment requires a direct effort. Garrison *et al.* (2000) and Peterson and Caverly (2005) describe the social presence in a community of inquiry as the ability of participants to project themselves socially and emotionally, as real people (i.e. their full personality), through the medium of communication being used. Though Picciano (2002) indicates that there is a distinction between interaction and social presence in an on-line learning environment, the posting of a message on a discussion board by a student in itself indicates a personal view from the part of the student and as such indicates a level of social presence.

Teaching and learning which is said to be open with regard to what is learnt and when it is learnt, still requires some measure of structure and direction in order to allow it to be measurable in terms of the goals achieved. The role of the teacher or instructor is to guide the learning process towards the achievement of desired outcomes. This role is necessary in discussion groups as Maloch (2002) indicates, 'the teacher assumes a leadership role, setting the focus of the discussion and determining both specific questions and probes'. While some argue that this may stifle the learning process (Maloch, 2002) a measure of guidance and direction is necessary to steer the discussion within broad parameters. The teacher however, needs to demonstrate versatility and the ability to adapt to the changing needs and circumstances of the students. As Mosenthal *et al.,* (2004) indicate, effective teaching requires the use of a variety of techniques to achieve desired learning outcomes.

Research studies have been conducted looking at aspects of the adoption of on-line learning. Some studies such as those conducted by Chavez *et al,* (2002), Kasiar *et al.* (2002), Wellman and Larson (2002) have looked to on-line learning adoption from the perspective of the student. Problems related to use of on-line learning among academics are addressed in Sosabowski *et al.* (1998a/b), Herson *et al.* (2000), Herson, (2003), Joyes (2000), Rossiter and Bagdon (1999), Mutula (2001) and Dearing (1997), who attribute the lack of adequate training and lack of uniformity of hardware and development of resources as a major problem. Staff attitudes towards on-line learning are addressed by Schwiesco (1993). The purpose of conducting this study was to identify the recurrent themes regarding problems related to online learning based on qualitative studies and offer possible solutions to the problems identified.

METHODOLOGY

The methodology for addressing this research was an integrative qualitative literature review. This methodological paradigm as described by Walsh and Downe (2005) emerged as a means through which an explanatory theory or model could be developed to explain the findings of a group of similar qualitative studies. As the purpose of this research was to establish a set of guidelines for use by academic planners and policy makers regarding the creation of effective on-line learning environments, this method was viewed as apt.
The precise methodology followed when carrying out this study was as prescribed by Finfgeld (2003), in Chenail (2009) and is described below.

Research Question to guide the Study

The research question which the study sought to address was:
"What problems exist that impede the practice of social constructivist based on-line learning in the elements of cognitive presence, social presence and teaching presence?"

Search for candidate sources

Primary research articles focussing on conditions necessary for ensuring a community of inquiry were purposively selected based on the inclusion criteria that they outlined impediments to effective on-line learning. A literature search was conducted using EBSCO as a link to Academic Search Premier and Educational Resource Information Centre (ERIC) databases. The search also used Google Scholar as a source of possible articles. The search criterion included the key-words "social constructivism" and "on-line learning" and was limited to January 2000 to September 2010. The search criterion also required full text articles in English with reference lists. The articles selected were based on primary research conducted using an analytical research design in order to identify themes regarding the findings. The Academic Search Premier and ERIC database searches were conducted on 01

December 2010 and yielded 8 articles. A further search in Google Scholar carried out on the 11 December 2010 yielded 203 articles, which resulted in a total 211 articles.

Retrieval of the Sources

The 211 articles consisted of a variety of publications such as book reviews, speeches, sections of books, quantitative studies and qualitative studies (both primary and secondary), accessible through University of South Africa (UNISA), and inaccessible through UNISA.

Of the 203 articles on Google Scholar, only 107 were accessible. Of the 107 articles and the eleven from ERIC and Academic Search Premier, sixteen articles were identified as suitable using the first criterion of full articles in English based on primary qualitative research. These articles were then appraised according to the Critical Appraisal Skills Programme (Table 1) which was adapted to include scores from zero to ten.

Table 1: Critical Appraisal Skills Programme (Adapted from: Unlin, P., Robinson, E. and E. Tolley. 2005. *Qualitative methods in public health: a field guide for applied research*. San Francisco, CA: Jossey-Bass

Screening questions	Was there a clear statement of the aims of the research? Hints*: What are/were they trying to find out?* *Why is it important?* *What is its relevance?*	0_____10	No Yes
	Is the qualitative method appropriate? Hint: *Does the research seek to understand or illuminate the subjective experiences or views of those being researched?*	0_____10	No Yes
Detailed questions	Sampling strategy *Is it clear:* (a) From where the sample was selected and why? (b) Who was selected and why? (c) How were they selected and why? (d) Was the sample size justified? (e) Is it clear why some participants chose not to take part? Hint: *Consider saturation from data.* *Was the sampling strategy appropriate to address the aims?*	0_____10	No Yes
	Data collection *Is it clear:* (a) Where the setting was and why the setting chosen? (b) How was the data collected and why? *Hints: Focus groups, structured interviews, and so on* (c) How the data were recorded and why? Hints*: recorded, made notes, and so on* (d) If the methods were justified during the process and why? *Were the data collected in a way that addresses the research issue?*	0_____10	No Yes
	Data analysis *Is it clear:* (a) How was the data analysis done? (b) How many categories/themes were derived from the data? Is there adequate description? (c) If steps have been taken to test the credibility of the findings? (d) Are you confident that all the data were taken into account?	0____10	No Yes

	Hints: Is there adequate discussion of the evidence both for and against the researcher's argument? Have attempts been made to feed results back to respondents, and/or using and comparing different sources of data about the same issue were that is appropriate (triangulation)? Was the analysis repeated by more than one researcher to ensure reliability? *Was the data analysis sufficiently rigorous?*		
	Research partnership relations *Is it clear:* (a) If the researchers critically examined their own role, potential bias, and influence? (b) Where the data were collected and why that setting was chosen? (c) How the research was explained to the participants? *Hint: Consider confidentiality, ethics, implications, and consequences for research findings for all of the above.* *Has the relationship between all of the researchers been adequately considered?*	0____10	No Yes
	Finding *Hints: What were the findings-are they explicit, easy to understand?* *Is there a clear statement of the findings?*	0____10	No Yes
	Justification of data interpretation (a) Is there sufficient data presented to support findings? (b) Do the researchers explain how the data presented in the paper were selected from the original sample? *Hints: Criteria for the selection of the quote, some details of the participant, what is the role of the data-example, illustration, "nice" quote to share, and so on.* *Do the researchers indicate the links between data presented and their own findings on what the data contain?*	0_____ 10	No Yes
	Transferability *Hints: Consider:* (a) Whether the context and setting in which the study was performed is described in sufficient detail to determine similarities and differences of your own. (b) If all the relevant clinically important outcomes were considered. *Are the findings of this study transferable to a wider population?*	0____10	No Yes
	Relevance and usefulness (a) In terms of addressing the research aim? (b) In terms of contributing something new to understanding/new insight/practice? *How relevant is the research?* (c) To your patient/problem/scenario. (d) To you personally. *How important are these findings to your practice?*	0____10	No Yes

Review and Appraisal of the Sources

The Critical Appraisal Skills Programme was used as a measure of the quality of the research articles. This was a departure from the views of Sandelowski, *et al*. (1997) who opines, 'In

general, studies should not be excluded for reasons of quality, because, as we noted previously, there are wide variations in conceptions of the good, and in quality criteria.' As indicated by Walsh and Downe (2005), the importance of including only trustworthy research when conducting an integrative qualitative literature review is crucial towards the credibility of this method.

After the appraisal of the articles, five were found to be sound as they scored an average appraisal mark of above 7 out of 10 and were used for the integrative qualitative literature review. The articles are listed in Figure 2 and the characteristics of the articles appear in Table 2.

Table 2: Demographic data on the studies included in the integrative qualitative literature review

	Maor (2003)	**Kehrwald (2008)**	**Makitalo-Siegl (2008)**	**Zhang *et al.* (2009)**	**Ruey (2010)**
Sample and data sources	12 postgraduate learners, student and teacher postings	Four cases in the context of a single faculty; CMC tools within the learning management system.	Three pre-service teachers, three online learning course students	48 students, instructor's field notes, online observations, students' online discourse and group artifacts	32 adult learners Course documents, artifacts, surveys, interviews, observations (in-class and online) and casual conversations with learners
Country	Australia	Australia	Finland	Taiwan	Taiwan
Characteristics	Science and mathematics teachers	Postgraduate students with online learning experience in several different courses	University students with basic knowledge of computers and the Internet	Undergraduate students first experience in online collaborative learning	Learners pursuing non-degree courses. All but one were first time online learners.

RESULTS AND DISCUSSION

In carrying out the integrative qualitative literature review, an attempt was made to account for all similarities and differences in language, concepts, images and other ideas around the target experience (Sandelowski *et al*., 199), which in this case was "the best practice for the setting up and maintaining of a conducive environment for social constructivist online learning". The findings are presented based on Garrison *et al*. (2000) community of inquiry and categorised into social, teaching and cognitive presences. Initially findings related to skills in online learning environment are presented as they are prerequisite to online learning. The findings are depicted in the form of a table (Table 3) and further explained below.

Cognitive Presence

Cognitive presence investigated under the sub-theme of social constructivist learning, came up with three distinguishing features namely competition, behaviourist preferences and achievement of varying goals which acted as impediments to social constructivist learning in online environments. The distinguishing features are addressed below.

Table 3: Identified themes and sub-themes

THEMES	SUB-THEMES	EXAMPLES
Cognitive presence	Social constructivist learning • Competition • Behaviourist preferences • Achievement of varying goals	"Students were very upset about being imitated and consequently being outperformed by their peers" (Zhang *et al.,* 2009) "Interviewees shared an understanding that collaborative learning involved cooperation " "Many interviewees commented that an instructor should "teach" them all the skills involved in the project, and assign the project as a drill afterwards instead of having them explore, search, learn and construct their own knowledge from the beginning" (Zhang *et al.,* 2009)"it became clear that the students were not actively engaging in peer learning. Rather, they were confining their contributions to the relevant topic of the week...Their contributions were not as deeply reflective as I hoped" (Maor, 2003)"As individuals, the group members seemed to have different perceptions of how they learned in the online learning environment" (Makitalo-Siegl, 2008)
Social presence	Ability	"Novice learners do not come to online environments with these skills. They must be learned" (Kehrwald, 2008). "The process of the activity also imposed pressure on them. Some learners reported that they had to act 'fast, both in typing and thinking' in order to keep up with the flow of the discourse." (Ruey 2010). "Technical issues can be time consuming in courses of this type" (Maor, 2003).
	Opportunity	"My sense is that the development of social presence in an online course takes more time effort and care than is usually allowed for" (Kehrwald 2008)
	Motivation	"I have only started being 'active' on the discussion boards with the web quests. Before that, there was no reason for me to get involved too much so I did the minimum" (Kehrwald, 2008)
Teaching presence	Heavy commitment	"I was aware of the heavy commitment both in time and effort that is required of the lecturer to facilitate discussion groups of this nature" (Maor, 2003)
	Course design	"A number of spring learners commented that the continuously emerging statements and diverse topics prevented any subject from being discussed in full" (Ruey, 201)
	Feedback	"Lack of feedback also appeared to have a negative impact on the learning effort..not being able to receive feedback from others reduced her enthusiasm and engagement working on assignments " (Ruey, 2010). "Assessment policy implemented in the course was too vague and too lenient" "no negative consequences to lack of participation" (Ruey, 2010); "participants expressed that instructor's availability, accessibility, and timely help were very important to reduce anxiety and to motivate participation" (Zhang *et al.,* 2009)
	Control	"Discussion contents were not focussed", "continuously emerging statements and diverse topics prevented any subject from being discussed in depth"; "the discussion often turned into chatting about personal matters" (Ruey, 2010)

Competition amongst students was an impediment to the creation of effective social constructivist on-line learning environments. Students who were accustomed to behaviourist teacher centred learning found it difficult to adjust to learner centred learning. This was evident in the study conducted by Zhang *et al.* (2009). When presented with learning tasks that required collaboration, the students displayed competitive tendencies and were not keen to share their work with their peers.

Behaviourist preferences on the part of online learners were particularly strong amongst the participants in Zhang *et al.* (2009). The participants were previously accustomed to seeing instructors physically in the lecture hall and as a result struggled with active, online constructive learning and the changed role of the instructor to that of a facilitator and guide. This difficulty was attributed to strong traditional perceptions of teaching and learning in Chinese culture "which values the instructors as the authority of knowledge and the centre of teaching, and the views of education as mostly about "teaching" as opposed to "learning". Zhang *et al.* (2009) commented that the participants in the study preferred face-to-face lectures, "many interviewees commented that an instructor should "teach" them all the skills involved in the project, and assign the project as a drill afterwards instead of having them explore, search and learn, and construct their own knowledge and skills from the beginning. In Maor (2003:130) social constructivist learning did not occur on the part of the learners as they too were initially learning on a personal level.

Achievement of varying goals was noted in Makitalo-Siegl (2008). The participants recorded achieving varied goals through their on-line learning experiences. Some participants stated they learned about how one learns in an online environment as well as the demands of on-line learning. Others learned about taking part in collaborative learning and negotiation processes as well as acquisition of technological skills as a result of learning on-line.

Social Presence

Impediments to effective social presence consisted of three sub-themes, ability to socialize, the opportunity to create social presence and the motivation to engage on a social level. The importance of the ability of on-line learners to send and read social presence cues was a major finding of Kehrwald (2008). The need for learning these skills was emphasized in these findings, as lack of these skills "may lead to learner frustration, anxiety and, ultimately, failure with online learning" (Kehrwald, 2008). Ruey (2010) similarly recorded a lack of technological skills as a hindrance to effective online learning interaction.

A second obstacle to the creation of social presence was lack of adequate opportunity for social presence. The reason for this is the time and effort on-line learning takes is often more than is available (Kehrwald 2008). Maor (2003) also noted that addressing technical problems in on-line learning was a time consuming hindrance and indicated that heavy commitment was required from lecturer and student taking part in on-line learning. in Zhang *et al.* (2009), the demanding nature of the course made all the participants feel hesitant to opt for a similar experience in future.

Lack of motivation to engage in social presence was noted as a further impediment to on-line learning with participants expressing that they found on-line delivery time consuming and frustrating with the virtual distance between the students, the instructor and amongst the learners themselves (Zhang *et al*., 2009). Participants also expressed anxiety and lack of motivation as a result of the instructors changed role in an on-line learning environment.

Teaching Presence

In the integrated literature study, ineffective teaching presence was seen as a stumbling block to online learning meeting its desired outcomes. The areas in which teaching presence was seen as weak fell into four main categories; commitment, course design, assessment and feedback, and control.

The role of the on-line lecturer was said to require a level of commitment and multiple roles which differ from conventional face-to-face learning environments. This theme was present in the findings of Ruey (2010) and those of Maor (2003).

Course design that catered for the individual needs of a diverse group of learners was lacking in online courses with the emergence of diverse topics which prevented any subject from being discussed in depth (Ruey 2010). The large numbers of learners enrolled for the course presented a challenge to the lecturer.

The lack of timely feedback in online courses was a finding that was evident in the studies. Teaching presence in the area of prompt feedback and high quality of course material came up in the findings in the articles (Ruey, 2010; Zhang *et al.,* 2009). The lack of prompt assessment and feedback from the instructor was noted as a contributing factor to students' dissatisfaction with the courses.

A level of control with regard to the learning process, in particular the discussion topics and the engagement of all the learners in the on-line discussions was seen as necessary. A strong teaching presence was a requirement that came up as on-line discussions were considered a waste of time as many discussions often turned into chatting about personal matters with some members not participating at all (Ruey, 2010).

Limitations of the Study

Limited databases were accessed, and one reviewer reviewed the articles. Though an appraisal instrument was used as a means of including only methodologically sound qualitative studies, subjectivity may have infiltrated the process. Methodological limitations could not be avoided as qualitative studies are highly subjective, it is difficult to objectively say one study is better than another (Engel and Kuzel, 1992).

CONCLUSION

In this study, impediments to the creation of online learning environments for social constructivism to thrive, was the lack of sufficient skill in using the technology and the insufficient or inappropriate teaching presence.

According to Garrison *et al.* (2000) cognitive presence is considered the most important of the three presences. However, results from this literature review indicate that importance of teaching presence in making the other presences active. The studies where students lacked motivation to take part in discussion forums as a way of forming social presence, the role of the teacher in setting the tone and making the platform comfortable was crucial to the establishment of social presence. This came out clearly in Maor (2003).

Teaching presence also accounted for the establishment of cognitive presence in cases where the discussions went off topic and participants chatted about personal matters unrelated to learning content. The role of the teacher in guiding social constructivist learning amongst the students came through clearly in Maor (2003).

In on-line learning environments the need for the users to communicate in a robust fashion in order to establish and maintain a social, teaching and cognitive presence is only possible if the students and instructors are comfortable with the online learning technology. A common theme across all the studies reviewed was the importance of technical skills amongst the users of online learning. The lack of adequate skills proved to be a major impediment to the successful practice of on-line learning for social constructivist learning. The studies

investigated indicated anxiety regarding on-line learning as a result of inadequate skills. This drawback may be addressed in initial training in the use of on-line technologies. The studies which did not record lack of technical skills as a problem in on-line learning were those whose samples were not using on-line learning for the first time.

In addition, lack of stringent teaching presence was seen as another impediment to the quality of online courses on a number of levels. With the establishment of social presence, the role of the teacher in setting the tone and creating a comfortable and safe environment where the online learners feel comfortable, safe and part of a community of learners is important. This may be achieved by the teacher introducing himself both professionally and personally and encouraging others to do the same.

The teacher's role with regard to providing direction of the discussions, which in some cases may go off topic, is key to allowing desired learning to occur. This is recorded by Maor (2003) where students found online discussions a waste of time as discussions sometimes turned into chatting about irrelevant personal matters. The teacher's intervention was successful in stimulating social constructive learning through provision of probes to guide the reflective thinking of students (Maor 2003).

Prompt assessment and feedback from the teachers is important in maintaining interest and motivation in an on-line learning environment. Where this was lacking, the result has reduced enthusiasm and engagement in working on assignment (Ruey 2010). Assessment practices in on-line learning environments need to take into account the nature of collaborative work as was evident in Zhang (2009:127-128) where some students who posted their projects early on-line received lower grades than those who posted later after they modified the projects that were posted earlier.

The role of the instructor in developing a conducive on-line learning environment cannot be over emphasized, as the driver of the learning experience from its inception through making sure the participants have adequate skills in using online learning technology, and throughout the learning process by guiding the process, stimulating constructivist learning and providing prompt feedback and assessment.

In addition, the course design should be such that it takes into account the diverse student profiles and abilities in order to make the online learning experience a successful one. An interesting finding of this study was the role culture may play in impeding the adoption of social constructivist learning. This was evidenced in the study by Zhang (2009) where students from a culture that promoted the unquestionable authority of the teacher as a source of all knowledge, proved to act as an impediment to social constructivist learning.

RECOMMENDATIONS

Based on the integrative literature review carried out in this study, teaching presence has shown itself to be the most important presence in enabling social constructivist learning in online learning environments. The role of training in the use of the technology on the part of the teacher and students prior to embarking in online learning may prove worthwhile in the successful practice of social constructivist online learning. Teachers who are to embark in online learning require adequate training in online learning pedagogy as it differs greatly from conventional face-to-face learning in aspects such as feedback, assessment and course design. This includes adequate training on the part of the teachers and students as well as support staff.

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