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An Investigation of Active Learning in a Virtual Learning Environment (VLE) Amongst Vietnamese Students in Higher Education

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ABSTRACT :

The interactive nature of Web-based learning has afforded learners greater opportunities to fully and actively participate in the learning process. However, there is some concern over whether virtual learning processes are also able to foster this type of active learning amongst Vietnamese students. This study aims to explore the potential of virtual learning to enhance active learning amongst Vietnamese students studying at a large Australian University. The study comprised two groups of Vietnamese students who were studying Master of Education and Master of Science and Technology courses. A mixed method approach was used to collect data. The findings indicate that students within this study tended to hold positive attitudes towards the potential of 'virtuality' to promote their active involvement in the learning process. The findings also suggest that prior learning style makes it more difficult to become an active participant in their learning for Vietnamese students. Further study is required to investigate how different Virtual Learning Environments such as Second Life; or newer Web 2.0 technology coupled with appropriate online teaching style and instruction might enhance active learning amongst students in different faculties or universities in Vietnamese educational context.

INTRODUCTION:

The rise of global communications technology and the ensuing amount of available information has led to several changes in the educational area. Emerging from this vast amount of information and interconnectivity is the development of e-learning as an educative process (Seng & Al-Hawamdeh, 2001; Lockwood, 2000). New educational environments created by the increased interconnectivity of the information technology infrastructure, such as virtual learning spaces and web-based learning courses, has affected the very nature of teaching and learning (Jones, Cramton, Gauvin & Scott, 1998). These types of courses have rapidly becoming accepted for either supplementing classroom instruction as in the case of blended learning and in some cases even replacing classroom-based instruction (Rahm & Reed, 1997; Arbaugh, 2000; Ahern & EI-Hindi, 2000; Peltier, Drago & Schibrowsky, 2003). They provide anytime, anywhere access to instructional materials for both educators as well as learners by using a variety of communication tools, such as email, instant messaging, discussion forums, chat rooms, blogs, wikis and hypertext navigation. These tools give learners the chance to

participate actively in the learning process and to communicate easily with others (Ragoonaden & Bordeleau, 2000; Phillips, 2005).

Markel (1999) stated that the e-learning can move the course from an instructor-centered, passive student model to an independent learning, student-centered, empowering model. Research has suggested that a teaching method that includes collaboration, interaction and interactivity works well within this medium (Thomas, 1998; Spiceland & Hawkins, 2002; Ragoonaden & Bordeleau, 2002). Furthermore, Sweeney & Ingram (2001), Ahern & El-Hindi (2000), and Arbaugh (2000) found that students who tended to be introverted and concerned about making mistakes in a public environment tend to prefer this type of environment and often participate more in on-line learning courses. E-learning allows students to overcome such problems by giving them many opportunities to participate in asynchronous, threaded discussions, giving them time to think consider their responses before posting and even communicate through e-mail and online chat rooms where language is less of a barrier in a VLE (Becta, 2004).

One of the most recognizable benefits of virtual learning is the ease with which knowledge can be socially constructed in on-line interactions. However, given that Vietnamese students have traditionally only been exposed to a passive style of learning (Tran, 1999; Nguyen, 2002), there are questions about whether virtual learning is able to foster active learning amongst this group of students.

THEORETICAL FRAMEWORK

Constructive Theory

The idea of learners getting involved in their learning, instead of passively receiving information from an instructor, has been considered the essence of education (Rubin & Hebert, 1998). It is asserted that successful learners "are active, goal-directed, self-regulating and assume personal responsibility for contributing to their own learning" (American Psychological Association, 1995: 6). This concept is referred to as Constructivism, which has been considered to be an outstanding approach to teaching and learning for over a decade (Widodo, Duit & Muller, 2002). The work of Dewey (1916), Piaget (1973), Vygotsky (1978) and Bruner (1996) can be seen as historical precedents for the constructivist theory of learning. The current learning perspectives incorporate the following important assumptions (Jonassen, 1994; Anthony, 1996; Ally, 2004):

- First, learning is an active process of knowledge construction in which the learner attempts to make sense out of the world rather than a passive recording or acquiring of knowledge.
- Second, learners actively construct their own knowledge based on their existing conceptions and knowledge.
- Third, knowledge is constructed by learners through social interaction with others and on the basis of interaction with their environment.

Active learning

The nature of active learning can be interpretated in two common ways (Anthony, 1996). First, "active learning" refers to any class activity that "involves students in doing things and thinking about the things they are doing" (Bonwell & Eison, 1991: 2). Students are given considerable autonomy and control of the direction of the learning activities (Champa, Hewagamage & Hirakawa, 2001; Lorenzen, 2001; Prince, 2004). Learning activities commonly identified in this manner include investigational work, simulations, case studies, role plays, visual-based instruction, peer teaching, small group discussion, debates, cooperative learning, drama, games, problem-solving, and journal

writing (Bonwell & Eison, 1991; Meyers & Jones, 1993; Anthony, 1996; Braxton, Milem & Sullivan, 2000).

Second, active learning is "quality of the pupils' mental experience in which there is active intellectual involvement in the learning experience characterized by increased insight" (Kyriacou & Marshall, 1989: 12). In other words, active learning requires "intellectual effort, encouraging higher order thinking tasks including analysis, synthesis, and evaluation, and provides a means for the learner to assimilate, apply and retain learning" (Bonwell & Eison, 1991; Harasim, et al, 1997). As with the first definition, this form of active learning may be contrasted with "passive" intellectual involvement in the learning experience that is characterized by an emphasis on assimilating new knowledge through memorization and practice (Anthony, 1996).

LITERATURE REVIEW

Virtual Learning Environments

A virtual learning environment (VLE) is referred to as a learning management software system that synthesizes the functionality of computer mediated communications software and online methods of delivering course materials (Britain & Liber, 2000). It contains a set of new teaching and learning tools designed to facilitate students' learning. The system can often track the learners' progress, which can be monitored by both teachers and learners. It aims to accommodate a wider range of learning styles and goals, to encourage collaborative and resource-based learning and to allow greater sharing and re-use of resources (Britain & Liber, 2000; the Joint Information Systems Committee, 2002). There are a number of VLE software packages available, including Blackboard, ClassFronter, TopClass, Lotus LearningSpace, WebCT, and as a free alternative Moodle (Britain & Liber, 2000).

According to Dillenbourg (2000), the specific features of a VLE are that the information space has been designed, that educational and social interactions occur in the environment, and that students are active participants, not just receivers of information. It is also necessary to note that VLEs are not restricted to distance education (Dillenbourg, 2000); teachers tend to use VLEs as part of a mixture of different teaching styles, combining computer-based instruction with face-to-face teaching to form a "blended learning approach" (Beta, 2004).

A VLE generally integrates a combination of some or all of the following components that supports multiple functions such as information, communication, collaboration, learning and management (Dillenbourg, 2000; BECTA, 2004):

- Synchronous collaboration tools (e.g. chat rooms, shared whiteboards, and video conferencing).
- Asynchronous communication tools (e.g. electronic email, discussion /bulletin boards, electronic diaries, intranets).
- Calendar; relevant web links; search tools; tools to create online content and courses.
- Assignments, online assessment and marking; Integration with school management information systems.
- Controlled access to curriculum resources and tracking students' activities.
- File upload area.

Collaboration and Interactions

Some researchers claim that virtual learning can result in feelings of isolation and lack of interaction with other students and with instructors (Arbaugh, 2002; Mintu-Wimsatt, 2001; Eastman & Swift, 2001). However, others have suggested that interaction is the key to effective virtual learning (Sherry et al., 1998; Wenger, 2001). In particular, some have found that the quality of the discussions and learning is enhanced with distance

interaction, and that that the discussion board can alleviate this criticism (Ahern & EI-Hindi, 2000; Arbaugh, 2000). Indeed, a VLE provides valuable tools such as synchronous and asynchronous communication for creating an interactive environment. For example synchronous and asynchronous discussions focus the development of knowledge-building communities where participants share information in the pursuit of a meaning, and reflect on the knowledge that they have constructed, and the processes that they used (Jonassen, 1994). Interaction allows learners to develop interpersonal skills, and to investigate tacit knowledge shared by a community (Anderson, 2004).

Motivation in a VLE

It is claimed that students do not learn well if they are not motivated (Driscoll, 1998). Motivation is a particularly important characteristic for learners' success in online courses (Arnes, 1990; Harasim et al., 1997). There may be many ways to motivate learners' and promote active engagement in a VLE. The one factor that best relates to motivation is the feeling of safety (Jensen, 1998). Billson (1994) believes that learners' participation levels will be enhanced when they feel psychologically secure in a group in terms of sharing their divergent views. Moreover, Driscoll (1998) argues that motivation is likely to be fostered when the social atmosphere promotes interaction and cooperation among learners. Thus, instructors need to construct an intellectual and emotional environment that encourages learners to take risks (Bonwell & Eison, 1991), to express themselves freely in appropriate ways, to share their ideas and ask questions (Hamilton, 1996).

The role of the instructor in a VLE

1. Virtual learning has been criticized for offering passive learning contexts and a lower quality of education than traditional classroom settings (Dumont, 1996; Rahm & Reed, 1997; Sonner, 1999). It is reflected in research findings that teachers seemed to use a VLE more to communicate with each other and to assign tasks to students than to directly support learners' acquisition of knowledge and skills (Beta, 2004). However, Salmon (2000) argues that the teacher ought to play an important and significant role in designing instructional strategies in a VLE to enhance the active involvement of the learners. Salmon (2000) describes the role and functions of "e-moderators" who are the new generation of teachers and trainers who work with learners in virtual learning environment as facilitators or moderators of learning who does not require extensive subject matter expertise. They facilitate students' learning by providing them with access and motivation, building up their confidence, encouraging mutual respect between learners, and developing their collaborative skills (Salmon, 2000; Lorenzen, 2001; Seng & Al-Hawamdeh, 2001; Phillips, 2005).

A number of studies have investigated the use of virtual learning environments in recent years (Ingraham et al., 2002; Britain & Liber, 1999), some studies are concerned with the creation of an active learning environment within an Internet-based course, and examine students' perceptions of the effectiveness of an active-learning, asynchronous internet course relative to that of a traditional classroom-based course (Thomas, 1998; Spiceland & Hawkins: 2002). Previous research shows that learning can be enhanced with an active learning format in an online course. However, it is undeniable that previous research in this field is slim, and none of these studies has examined the potential of virtual learning to enhance active learning amongst students who have previously only been exposed to a passive role within the education process, such as in the Vietnamese context. Therefore, this study aims to explore the potential of virtual learning to promote active learning amongst Vietnamese students studying at an Australian University. The study will specifically answer the following research questions:

1. What are the perceptions of Vietnamese students toward the potential of virtual learning in fostering active learning amongst Vietnamese students in higher education?
2. How can a virtual learning promote the active involvement of Vietnamese students in their learning?
3. What hurdles affect Vietnamese students' ability to engage in active involvement in a VLE?

METHOD OF STUDY

Participants

Participants in this study consisted of two groups of Vietnamese students studying Masters by Coursework degrees at a large Australian university; 17 students were studying Master of Education (ME) and 23 were in the second group, studying Master of Science and Technology Education (MSTE). The sample was purposive, where all participants had to meet the following criteria: they had previously been, or were currently involved in Web-based learning courses, in order for them to reflect on their experiences, thoughts and feelings about virtual learning. In addition, they must have be of Vietnamese origin and enrolled at the University as international students. This would allow them to analyse the possibility of using virtual and active learning in the Vietnamese context. A total of 43 Vietnamese students were invited to participate in the study, with a response rate of 40 (93%). The age of participants ranged from 24 to 45 years old, with a mean age of 29.99.

Data Collection

In order to obtain a comprehensive picture of students' perceptions, two measurement types were used in the study: a quantitative measure (questionnaire), and a qualitative measure (semi-structured interviews).

Quantitative

The survey contained a combination of mixed scale, multiple choice responses, short answer questions, and five-point Likert scale statements. Short answer questions were used to collect demographic data, and the multiple choice responses were designed to assess participants' previous experience and knowledge of virtual learning. Attitudes and beliefs towards active learning within a virtual learning environment were elicited using the Likert-style statements, with 5 representing a high level of agreement and 1 representing a high level of disagreement (Oliver, Rust, & Varki, 1997). The limitations of engaging in a virtual learning environment were also elicited using Likert style statements with scales ranging from 1 = least important to 5 = most important.

The quantitative data were analyzed using the SPSS (Coakes, 2006). First, the frequencies of demographic data and multiple choice responses were conducted and evaluated in percentage terms. Second, mean responses (based on the five-point scale) for each of the statements regarding students perceptions were calculated. A chi-square analysis was also administered to the responses of each item to determine whether the responses were different from 3, the neutral midpoint of possible responses. Finally, a non-parametric statistical test, the Friedman test, was utilized to detect differences in a ranking question that regarding the hurdles affecting students' active involvement in a virtual learning environment.

Qualitative

In this study, focus groups interviews were used as "a supplementary source" of data (Morgan, 1997: 2) to clarify findings elicited from the questionnaire. The interview questions were organized around four areas: (1) the importance of learning tools in a VLE in enhancing active learning; (2) the role of online instructors and learners; (3) the interactions and motivation in a VLE; and (4) the barriers of engaging in a VLE.

Once the completed questionnaires were returned, a random sample was

taken a focus group interview was organized. This group comprised of eight students. The interviews were open-ended and lasted approximately 40 minutes.

Qualitative data was analyzed using content analysis where common ideas were grouped into similar themes and coded. Representative responses from the interviews were used to illustrate and substantiate results derived from the questionnaire.

FINDINGS

A. Participant Demographics

Table 1. Participant demographic data

		n	Percent
Age	24-29	21	52.5
	30-35	12	30.0
	36-44	7	17.5
Gender	Male	20	50.0
	Female	20	50.0

The results showed that of the 40 participants, 20 (50%) were male and 20 (50%) female. 52.5% of were aged between 24 to 29 years, 30% were aged between 30 to 35 years, and 17.5% were over 36 years old.

B. Responses

Perceptions of Vietnamese Students of the potential of a VLE to foster active involvement.

In order to assess the range of virtual learning activities, participants were asked to report on the tools activities they had used during their studies to give an indication of active learning.

The results indicate that the e-mail exchange is the most common activity with 87% of participants experiencing this type of communication within a VLE and the use of discussion forums (82.5%) also a highly used tool. Online quizzes, had been used far less (20%), which suggests these participants tended to make use of tools in the VLE that required more active involvement in their learning.

Table 2. Activities that Vietnamese students experienced through a VLE

Item	n	Percent
Discussion forums	33	82.5
Chat rooms	26	65.0
Quizzes	8	20.0
Accessing lecture notes and assignment details	32	80.0
Hyperlinking to other web pages	29	72.5
E-mail exchange	35	87.0

The results indicate that the e-mail exchange is the most common activity with 87% of participants experiencing this type of communication within a VLE and the use of discussion forums (82.5%) also a highly used tool. Online quizzes, had been used far less (20%), which suggests these participants tended to make use of tools in the VLE that required more active involvement in their learning.

Table 3. The potential of a VLE to promote active involvement in learners.

Item	Mean*	X^{2**}
Discussions through discussion forum enhance students' ability to learn actively.	3.70	37.75
A VLE can enhance independence and self-directedness in learners.	3.82	39.62
Chat rooms and email help learners exchange information faster and encourage active participation of learners.	4.07	47.75

*5=strongly agree; 1=strongly disagree
** = The response is significant at p=. 01

Table 3 highlights participants' attitudes towards the potential of a VLE to promote active learning. Since all X^2-values are greater than 13.277 (the comparison value for a population of 40 and alpha of .01), each response is

significant. The highest mean response related to the potential of chat rooms and email in encouraging active participation of Vietnamese learners. The next highest mean response showed participants thought that a VLE could enhance independence and self-directedness in learners. Surprisingly, the lowest mean response concerned discussions through discussion forum enhance students' ability to learn actively and this might be due to the lack of exposure of Vietnamese students' to such collaborative tools.

A further analysis in qualitative data also shows that most students appear to have positive attitudes towards chat room and e-mail exchange. Some students commented:

> I am interested in using chat rooms because it gives to me more relaxation and fun when I exchange ideas with others, and that enhance my involvement (no.4, ME student).
>
> Thanks to e-mail, feedback is easy. I pose questions and receive relatively quick responses from the teacher and other learners (no.4, MSTE student).

Analysis of the qualitative data helps shed some light on participants' perceptions of the role of discussion boards to enhance students' ability to learn actively. It would appear that perhaps the formality of discussion boards and language barriers may hinder full and frank discussion, but participants also expressed positive attitudes towards their use.

> Sometimes I have much confusion to understand a certain article or concepts within the article. When I raise such points with the whole group via the discussion board, they help me to clarify it and from that I construct my own learning (no.4, MSTE students).
>
> I am so interested in being involved in a discussion board; it allows us to contribute our views, share ideas and information. In addition, I have more time to read others' responses, to ponder their questions and to answer their questions (no. 4, MSTE student).

Participants were asked to rank how much they agreed or disagreed with statements relating to the roles of teachers and learners in order to ascertain their understanding of active learning. The responses are presented in Table 4. Since all X^2-values are greater than 13.277 (the comparison value for a population of 40 and alpha of .01), each response is significant.

Table 4. Participants' perceptions of the role of students and the teacher in a VLE.

	Item	Mean*	X^{2**}
The learner's role	Learners are passive receivers of knowledge	3.90	40.25
	Learners are the centre of activities in a VLE	4.17	47.25
	Learners actively construct knowledge through the reactions and responses of other learners	3.75	34.25
The teacher's role	The teacher's role is as a facilitator or mentor	3.87	39.25
	In a VLE the teacher is only source of knowledge and skill	4.02	43.75

*5=strongly agree; 1=strongly disagree
** = The response is significant at p=. 01

Participants strongly favoured learners being at the centre of activities in a VLE and disagreed with the idea that learners are passive receivers of knowledge. This is further explored and clarified in the interview data.

When being engaged in a VLE, I find that I become more responsible with my own learning (no.4, ME student).

Yes I do agree that when participating in WebCT I become an autonomous and self-directed learner. I cannot stay waiting for knowledge the teacher brings to me. I have to search different resources to find information, to write and answer the questions that the instructor posed in the discussion forum (no.4, MEST student).

The qualitative data also highlights participant's perceptions of the role of the teacher in a VLE with most viewing the online teacher as a facilitator or a mentor and not the sole source of knowledge. As one MSTE student commented that the instructor plays an important role in fostering interactions amongst learners.

I like the way the instructor facilitates other students and me to learn in a VLE. She raises the issues, poses questions, and requires us to work together, in pairs or small groups. This helps others and me to have more chance to be involved in our learning (no.3, MSTE student).

The possible motivators of students' learning which resulted in students' active engagement in a VLE

Participant's views on what motivates students to become active learners in a VLE are shown in table 5. Since all X^2-values are greater than 13.277 (the comparison value for a population of 40 and alpha of .01), each response is significant.

Table 5. The possible motivators of students' learning which resulted in students' active engagement in a VLE

Item	Mean*	X^{2**}
Students spend extende periods of time exploring and posting their opinions	3.42	29.25
Introverted learners feel comfortable to post thei opinions on discussion forum	4.05	46.75
Learners have more chance to reflect their learning in a VLE	3.52	37.12
Learners have more chance to interact with learning materials in a VLE	3.87	41.75
Learning in a VLE promotes interaction between student and student .	4.07	56.75
Learners can share and learn the diverse perspectives, ideas and learning resources of group members when being involved in a VL	4.27	57.25
Learning in a VLE promotes interaction between learners and th teacher .	3.52	25.75
Both teachers and students contribute and share useful informatio	3.95	31.00
Students receive more and faster feedback and encouragements from the teacher	3.67	20.75
Receiving faster feedback from the teacher and other participants helps students learn more effectively	4.12	55.62

*5=strongly agree; 1=strongly disagree
** = The response is significant at p=. 01

The results show that the participants tended to agree that "Learners can share and learn the diverse perspectives, ideas and learning resources of the group

members when being involved in a VLE" (4.27) and this is the most important motivator resulting in their active involvement in a VLE. Qualitative data reveal that respondents support these claims.

> Most of our information exchange is through e-mail, discussion boards, and chat rooms. We like the social aspect of them. We not only share information of our learning, we share things that happen in our daily lives, which encourage us to participate in group learning actively and effectively (no.7, ME students).
>
> Through working in groups and interacting with other learners, I can access many solutions from my group members. From this, I can learn good solutions and compare with my own solutions. Moreover, sharing and exchanging ideas together, this helps us to see issues in many angles and help us to reflect more on our own learning (no.7, MSTE student).

Additionally, respondents believed that "receiving faster feedback from the teacher and other participants helped them learn more effectively" (4.12). Some students commented that the regular encouragements from the instructor assisted them to learn actively.

> Getting feedback from the lecture and other learners helps me to promote my own learning more (no.7, MSTE student).
>
> Usually, the instructor communicates with us via e-mail and discussion forums. She often sends messages and feedback to all students. For example, after I have finished my writing or discussions, she sends to me an encouragement. This creates more motivation and interest for me to learn (no.7, ME student).

Respondents also tended to agree that "Introverted learners feel comfortable to post their opinions on discussion forum" (4.05). For example, some students reported:

> Normally I am very reluctant to participate in the regular classroom, but I feel very confident and comfortable to express my ideas through online discussion (no.1, MSTE student).
>
> I am an international student, so my language is not really good. This is barrier that makes me afraid to contribute my ideas directly face-to-face in class. But participating in a VLE, I feel more confident to contribute things through online discussions (no. 1, ME student).

However, when compared to face to face learning, fewer participants believed that learners have more chance to reflect their learning in a VLE (3.52), and that learning in a VLE promotes interaction between learners and the teacher" (3.52). Participants thought that, spending extended periods of time exploring and posting their opinions (3.42) was not particularly conductive to promoting active learning in a VLE. Qualitative analysis indicates that participants preferred the face-to-face interactions with the instructor, and they thought that it was better to blend both virtual interactions and face-to-face interactions. They revealed:

> The teacher and learners have not enough social contact. Yes, I mean the face-to-face interaction. Therefore relationships between the teacher and learners are not really close (no.7, ME student).
>
> I favor face-to-face interactions because I can exchange my ideas, talk, and receive immediate feedback from the instructor (no.7, MSTE student).

Barriers that may affect Vietnamese students' ability to engage actively in VLE

Students were asked to respond to hurdles that they faced when being involved in a VLE on a scale of 1-5 and in order of importance, with 1 being least important and 5 being most important. The results shown in Table 7 indicate that X^2 (4, N = 40) = 21.705, p<. 01. These

values reveal that there are significant differences amongst choices of participants, and that the students' prior learning style in Vietnam appears to be the greatest disadvantage for Vietnamese students to engage in a VLE.

Table 7. The barriers that may impede students' engagement in a VLE

Item	Mean Rank	X^2 (4, N=40)
Technical problems	3.18	21.705
Students' prior learning style in Vietnam	3.80	
Inconvenience of time	2.21	
Internet unavailable	2.89	
Unconfident in using online learning activities	2.93	

Qualitative interview data tends to support this claim.

> Actually, my culture affects my learning in a VLE so much. Sometimes I think it is better for me to be a modest person. So I tend not to share much about what I know, and that influences the effectiveness of being involved in groups and this is an obstacle to working in groups (no.2, MSTE student).
>
> We often accept things and ideas, so we tend to have less contribution to the group discussions (no.2, ME students).

Whilst it appears that prior learning style can be detrimental to active involvement in virtual learning, in formal discussions and assignment composition, it may actually be of great benefit. One student's comments reveal that the student's prior learning style in Vietnam partially assists him to write good formal discussions or assignments.

> Yes, the way I learned in Vietnam helps me a lot when I engage in a VLE. For example, in Vietnam I have been developed writing skills more than talking and this skill supports me to write good formal discussions or assignments in a VLE (no.2, ME student).

The participants ranked "Technical problems" as a significant barrier to active involvement in virtual learning. Indeed, some students commented that they did face a few difficulties when being involved in a VLE for the first or second time; however, after the first few weeks, they could overcome obstacles easily and this resonates with Salmon's 5 Step Model of Facilitating e-learning (Salmon, 2000). For instance, one Master of Science and Technology Education student and one Master of Education student shared a perception:

> I have no idea how to use WebCT, but it is not a big problem. I get through quickly just after a week (no.2, MSTE student).
>
> I cannot access WebCT for the first week; it is maybe the Internet connection. I think that good Internet connection is the first pre-requisite for participating effectively in a VLE (no.2, ME student).

Discussion of the findings

The study yields results consistent with previous research related to web tools in a VLE (Spiceland & Hawkins, 2002). Students tended to be involved in e-mail exchange, and discussion forums, rather than other learning tools in a VLE. Concerning communication and learning effectiveness, results indicated that e-mail and chat rooms were perceived as the most common and effective means of communicating which assisted learners to exchange information faster and encouraged active participation of learners.

The findings of this study revealed that respondents tended to reject the traditional notion of the teacher being the font of all knowledge. The teacher's role in a VLE was perceived as facilitator or mentor. These findings are supported by Phillips (2005), and Salmon (2000). Both of them believed that in order to create a learning community for students to actively

participate in a VLE, the instructor' role changes from being an authoritarian expert of knowledge to a facilitator of learning experiences. The role of learners was perceived to be the centre of activities in a VLE, not to be passive receivers of knowledge. The findings tend to be inconsistent with previous research that Internet-based education offers a passive learning context (Rahm & Reed, 1997). Rahm & Reed (1997) stated that the pedagogical and learning approaches that were required to make on-line education programs effective were not correlated to the ability to deliver such programs. For this reason, on-line education learning courses could not foster students' active learning. However, the current study perhaps suggests that since Rahm and Reed's research, educators' use of virtual teaching and learning has vastly improved. In particular, the instructor facilitating students' learning by raising controversial issues, posing questions, and assigning students to work in pairs or small groups and encouraging enquiry based learning. It appeared that participants within this study were exposed to and encouraged to participate in active learning by their respective instructors who facilitated and moderated activities, offered students more opportunities to participate actively and become more involved in their own learning.

The results in this study revealed that students valued the collaboration and sharing of information between learners, and that this was the most important factor to motivate students' learning and resulted in active involvement in a VLE. This finding is supported by Driscoll (1998), who claims that motivation is likely to be fostered when the social atmosphere promotes interaction and cooperation among learners. Regarding feedback in a VLE, students perceived receiving faster feedback from the teacher and other participants helps students learn more effectively. This finding is supported by previous research that the provision of feedback from the teacher and other participants through discussion boards and e-mail encourages participation and helps them to learn more effectively (Kemshal-Bell, 2001).

The results also suggested that Vietnamese students studying in a VLE did feel confident, and more comfortable to contribute their opinions. This finding is consistent with and related to the results of Sweeney & Ingram (2001), Ahern & El-Hindi (2000), and Arbaugh (2002), who found that the quality of discussions and learning was enhanced with interactions in a VLE because students' comments were more thoughtful, and shy students were less reluctant to participate. The benefit that a VLE promotes seem to be relevant to the context of Vietnamese culture, the fear of "losing face" tends to make students reluctant to express their points of view or raise questions, especially if this may be considered as expressing public disagreement (Nguyen, 2002). A VLE is likely to allow students to overcome these problems by giving them opportunities to participate in discussion boards or communicate through e-mail and online chatting rooms in a VLE. This may lead to a greater depth of learning and engagement for many students.

Other studies document dissatisfaction with on-line courses resulting from feelings of isolation and lack of interaction with other students and with instructors (Arbaugh, 2002; Mintu-Wimsatt, 2001). The results in this study indicated that students believed that a VLE promotes interactions between learners and learners. However, students tended to be neutral to the question of whether a VLE promotes interactions between learners and the teacher. Through interview data, it can be seen that Vietnamese students tend to favor face-to-face communication and interactions with the instructor. The reasons are that face-to-face interactions offer the opportunity for greater feedback, more direction and expert opinion from the teacher, which appear to be particularly important to Vietnamese students and perhaps make them feel more comfortable as this is their traditional view of the role of the teacher.

Prior learning style in Vietnam appeared to be the greatest disadvantage for Vietnamese students to engage in a VLE. However, qualitative comments indicated that students have both positive and negative points of view towards this claim. To further clarify this issue, it can be seen that the survey question asks participants whether they believe that prior learning style has an effect on students' ability to engage in a VLE, this could have been seen as a general question relating to any student (not necessarily themselves), whereas, during the interview, participants were asked a similar question, but this appeared to be interpreted in a more personal context, with participants responding about whether they believed that their own prior learning style had an effect on their ability to engage. This may account for the differences in the responses to both questions and perhaps suggests that exposure and experience with VLEs can overcome the barriers associated with prior learning styles of Vietnamese students and students to become more active learners.

It would appear that the instructor has an enormous responsibility to design learning activities which promote active learning. It can be suggested that the findings of this study indicate that in addition to barriers of prior learning style being overcome, the instructors' skill in facilitating learning, of promoting and moderating discussions, group work and other forms of active learning tasks has enabled the Vietnamese students who were part of this study to become active learners.

Additionally, respondents tended to believe that difficulties regarding technical issues did not impede their ability to actively participate in a VLE. This finding is inconsistent with previous research that a lack of comfort with the technology inhibited students' participation (Dumont, 1996). Dumont (1996) found that repeated failures when being involved in VLE activities such as uploading assignments and using Internet tools to learn led to students' frustration and anxiety, and that did hinder some of them from active learning. Contrary to this, some students in the current study may have been faced with a few technical difficulties when being involved in a VLE for the first or second time; however, they were able to overcome obstacles easily after the first few weeks through exposure to learning within a VLE and the support and facilitation of the instructor.

Educational implications and recommendations

On the basis of the findings of this study, several implications and recommendations emerge. The first implication relates to the use of a VLE as an adjunct to a face-to-face class. In other words, a blend of face to face and a VLE might be deemed to be the optimal combination. For instance, a topic may be discussed via a discussion forum in a given time period in a VLE and later can be followed by a face-to-face class to evaluate the discussion in terms of the development and the use of argument and the appropriateness of students' contributions. In this manner, both the advantages of the discussion board in terms of allowing freer discussion at an in-depth level, and the advantages of face-to-face classes in which the instructor's feedback is given, may be exploited. In moving toward innovative teaching methods by shifting from teacher-centered to student-centered approaches in the Vietnamese context, a VLE could be used as a supplement to traditional approaches. Such a course could be a means for Vietnamese policy makers, educators, and teachers to take into consideration a new medium which fosters active learning amongst Vietnamese students.

The findings that prior learning background has an influence on how Vietnamese students respond to a VLE can be seen as a useful implication for teaching practice in Australia and also for this study's participants when they return to teach in Vietnamese universities. It is important to note that Vietnamese students bring with them their own rules, ideas, assumptions and experiences that are very different from what they will

encounter in a new educational environment (Arkoudis, 2007). The teachers need to set up a supportive environment to enhance Vietnamese students' learning (Hughes, 2004 & Arkousdis, 2007). First, teachers need to get to know about Vietnamese students, their life, culture, and individual learning styles, and to get to know how they deal with various matters. Observing them, asking questions and listening to their answers allow teachers to check out the students' assumptions and generalisations and to enhance their cultural awareness. Second, teachers really need to appreciate Vietnamese learners' needs and their expectations of and readiness for online learning (Hughes, 2004); for example, what do Vietnamese students understand about the lecturers' role, seminars and tutorials, or assignment writing? At the same time, Vietnamese learners also need to know both what the teachers expect of them, and what they can expect to receive from the teachers (Hughes, 2004). As well as addressing expectations, it is also important for teachers to explain assessment criteria so that students can understand what is meant by good work, and to offer constructive feedback to students (Arkoudis, 2007).

Educators of students whose second language is English may need to create opportunities for students to be more involved in small group participation. These students need to be given adequate time to prepare responses and communication tools within VLEs provide this opportunity (Arkoudis, 2007& Hughes, 2004). In addition, teachers should group Vietnamese and domestic students together, and structure group tasks in such a way that their diversity of experience and knowledge is necessary to complete the tasks successfully (Hughes, 2004). Group discussions will be successful if, early in the semester, teachers create a safe teaching and learning climate in which Vietnamese and other students interact with each other (Jensen, 1998 & Billson, 1994), talking and getting to know each other. In this way, Vietnamese students should become more involved and feel that they can contribute to the discussions.

In conclusion, the findings of this study generally agree with previous research indicating that students within study have a positive attitude towards the potential of 'virtuality' to promote their active involvement in the learning process. It would be valuable to conduct a comparative study to investigate the potential of a VLE to enhance active learning amongst Vietnamese students studying in universities and colleges in Vietnam.

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