Students' Readiness Towards E-learning. A case study of Virtual Classrooms for secondary education in Palestine

Khitam Shraim, Birzeit University, Palestine, kshraim@birzeit.edu
Zuheir Khlaif, Ministry of Education, Palestine,zuh.khlaif@gmail.com

Abstract

This paper explores students' readiness and attitudes towards E-learning paradigm through developing an interactive Web-based application prototype called Alaws Educational Network. The platform of the site provides a variety of methods for a student-centred learning process including Virtual Classrooms (VCR), discussion forum and e-training courses. High secondary students who regularly participate in VCR were asked to evaluate the different aspects of the VCR in terms of: usefulness, self-efficacy, willingness and challenges. The results have shown that students have positive attitude towards the usefulness of e-learning methods but they may not yet ready to adapt them. Therefore, it is imperative that VCR should be seen as supplement and not replacement to the traditional learning methods. This paper further highlights various challenges in implementing e-learning in public schools in developing countries.

Key words: e-learning, VCR, student-centred learning, readiness, Palestine.

1. Introduction:

The rapid pace of technological and economic developments has placed greater demands on education systems. The crucial need for students is to focus on the importance of lifelong learning, that is, to continuously upgrade their knowledge and skills, to think critically and to inspire creativity and innovation so as to adapt to global change (UNESCO, 2004). Recently, a new paradigm of teaching and learning process, e-learning, has emerged as a result of the rapid diffusion of ICT. It is widely believed that e-learning, if implemented properly, will empower all learners to fully engage in the 21st century (ibid).

E-learning also referred to online learning or virtual learning has been defined as a wide set of applications and processes such as Web-based learning, computer-based learning, Virtual Classrooms (VCR), and digital collaboration. It includes the delivery of content via Internet, audio- and videotape, satellite broadcast, interactive TV, and CD-ROM (Kaplan-Leiserson, 2000). The explosion of the knowledge age has changed the context of what is learnt and how it is learnt – the concept of VCR is a manifestation of this knowledge revolution (Wikipedia, 2008). VCR is basically a virtual learning environment where courses are not taught in a classroom face-to-face but delivered on the Internet (Cruthers, 2008). VCR has great advantages, such as improving access to advanced educational experiences by allowing students and teachers to participate in remote learning communities; and improving the quality and effectiveness of education by supporting a collaborative learning process (Watson et. al, 2004; Cruthers, 2008). However, in order to benefit from these advantages, both learners and teachers will need to be able to adopt a new attitude towards e-learning models (Rozgiene et al., 2008). Therefore, investigating the readiness and attitude towards these models is important for their success.

The research literature on e-learning has grown significantly. Much of this literature focuses specifically on tertiary education and not as much has been published in fully online and blended courses in primary and secondary schools (Picciano and Seaman, 2007). The main purpose of this paper is to analyze and evaluate the experience of students in utilizing an individual pilot project of VCR to introduce e-learning paradigm to support the students in higher secondary education in an emergency situation in Palestine where ongoing conflict problems have negative effect on access to good quality of education.

The Palestinian education system has emerged through the midst of the ongoing Palestinian-Israeli conflict and repeated emergencies. Teachers and students are regularly humiliated, subject to some psychological problems as they cross the checkpoints or Wall gates. In response to this situation, teachers have been relocated to schools closer to their homes and this has put a strain on equitable distribution of qualified teachers among schools especially in the fields of mathematics, science and English (PMEHE, 2005). Dropout rates amongst students are increasing due to difficulties in getting to school safely. Girls are particularly affected, since parents do not want them especially to have to spend so much time getting to and from school, nor to be subject to the humiliations of the Israeli soldiers or to face other dangers (ibid). School schedules are interrupted; students' and teachers' attendance rates are low: they spend more time travelling to and from the schools than they spend learning in the classrooms. The absence of teachers and the inability to provide substitute teachers cause the students to leave school earlier, so the curriculum assignments for the year are not completed. Many students enrolled in private lessons which are expensive and not a fordable for all students' families.

The above-mentioned problems indicate that education reform to enhance the learning process is a priority. With the advent of ICT, new ways of e-learning approaches have emerged such VCR. VCR has the potential to overcome many of these problems and, therefore, can help improve the quality of learning for all and can truly prepare today's Palestinian students for future participation in the global knowledge economy (EL-Harazin et al., 2007).

The remainder of the paper is organized as follows: section 2 covers the literature review from recent studies that have been covered in the context of e-learning implementation and adoption; section 3 looks at the e-learning initiative in Palestine. Section 4 presents the methodology adapted for this research while Section 5 presents an overall discussion of the potential of the e-learning as well as the set of recommendations to introduce e-learning paradigm effectively in Palestine. The conclusion is given at the end of the paper detailing the lessons learnt from the research.

2. Literature review:

The importance of e-learning is widely recognized as a mean to enhance accessibility and quality of teaching learning process (Watson e. al., 2004; Cruthers, 2008). E-learning is viewed as a tool for providing opportunities for marginalized and disadvantaged students or who are unable to attend classes due to physical, social and economic constraints (ibid). A wider range of students can be reached anytime and anywhere provided that the Internet connection is available, therefore increasing the number of school-age children who access to education system (Cruthers, 2008). Besides, significant literature indicated that online learning, in particular, VCR supported critical thinking skills, problem-solving,

communication and interaction, learning autonomously and flexibility in time management (Cavanaugh, 2001; Swan, 2001; Johnston et al., 2005).

While it has many benefits, VCR has many challenges. There is a great concern among researchers regarding the issue of the digital divide. As is well known, a significant segment of individuals still does not have access to the Internet or does not have the required IT skills. Consequently, in most countries, e-learning is not for everyone (Kearsley, 2002). Although the rapid development of ICT provides easier and more affordable connectivity to the Internet, thereby narrowing the digital divide, equitable access will continue to be a major concern to governments worldwide, even in developed countries. Common problems also indicated by previous studies regarding the new skills required that will enable learners and teachers to use and benefit from e-learning models (Picciano and Seaman, 2007; Rozgiene et al., 2008; Andersson and Gronlund, 2009). Presumably, the more experience in using the computer and Internet, the more likely students and teachers will be inclined to accept and use e-learning style.

Parents have also concerns about children's social development (Cavanaugh, 2001). In an online environment, students may feel isolated. Although online courses provide various opportunities for learners to interact with each other and with their tutors such as live chats, discussion boards, group project which reduce feelings of isolation (Johnston et al., 2005), yet there is a need to develop and promote e-learning process by enabling learners to become self-motivated, self-reliant and self-managing (ibid). Since e-learning is about individuals and about using technology systems to support constructive social interactions, it may work best when it is combined with some face-to-face classroom experience (Cavanaugh, 2001).

In general, technologies present opportunities. The real challenge lies in not only ensuring that certain preconditions are met for e-learning, such as access to ICT tools, networks and literacy, but also that of how to change the perception of teachers and learners towards e-learning. For the success of an e-learning implementation, there is a need to acknowledge the importance of assessing readiness of organizations, teachers and learners to adapt this learning style (So and Swatman, 2006). An e-learning readiness evaluation can help an organization to identify potential aspects that are necessary to ensure that the design of e-learning strategies tailored to meet learners' needs (ibid) and how teachers and learners come to accept and use an e-learning style as well.

A significant literature addressed various issues of readiness to e-learning. For example, Aydın and Tasci (2005) assess the organizational readiness for e-learning in Turkey with instrument including four constructs: technology, innovation, people and self-development. While Watkins et al. (2004) develop an instrument to measure an individual's perceived readiness to engage in e-learning. The instrument included several items which are technology access, online skills and relationships, motivation, ability to use online audio/video, ability to use Internet discussions, importance to learner's success. Agboola (2006) also evaluate the awareness and perceptions of academic staff in using e-learning tools in a post-secondary institution in Malaysia. He found that e-learning training and e-learning confidence were of practical importance in predicting both e-learning adoption and e-learning readiness. So and Swatman (2006) examine how ready Hong Kong's primary and secondary school teachers are to accept and adopt e-learning. They found that respondents are not yet fully prepared to use e- learning technologies – with differences in readiness perceived between male and female; and secondary and primary school teachers; as well as between teachers from different secondary school.

3. E-Learning Initiative in Palestine:

Recently, e-learning grows rapidly across the higher education sector in Palestine as an increasing number of educators and policymakers recognize the benefits of learning unconstrained by time and place. Nearly, every university in Palestine is offering some type of online education. Since 2005, there are many e-learning donor-funded projects come out. Among them Avicenna Virtual Campus is an ambitious project that aims at creating new community of universities sharing best practices and pedagogical innovation through a network of E-learning centers across the Mediterranean. It involves 15 countries including Palestine which is represented by Al-Quds Open University. RUFO is another example in which five universities in Palestine participate in. RUFO's purpose is to create an interuniversity network in Palestine for the development of individual and collective competences in the field of open and distance learning, in connection with European networks. RUFO project is supported and financed by the General Directorate of Education and Culture of the European Commission (2005 –2008) and coordinated by Cnam-Paris (Shanti, 2009).

For public schools, Palestine is still in the process of planning for e-learning approach. For example, the Palestinian Educational Initiative (PEI) was launched in 2005. The overall objective of the PEI is to assist the Palestinian people in fulfilling their commitment towards integrating ICT in the education system within a model of public/private partnership. MEHE and government and non-government stakeholders and local and international organizations such as the Massachusetts Institute of Technology (MIT), Birzeit University, the World Economic Forum, UNDP and other business firms are encouraged to involve in the implementation of ICT related initiatives (PEI, 2005). However, PEI was halted due to political considerations. Anew cooperation programme 2008-2011"e-Learning Curriculum in Primary and Secondary Education" with Belgian is under way to help developing a National E-learning Strategy for the Palestinian Education System. The workshops with "stakeholders" and experts in e-learning have highlighted the potentials of e-learning in the process of improving the quality of education. More recently, the Unit for Learning Innovation (ULI) at the Birzeit University has developed models for the biology and chemistry curricula at the 9th grade. 18 science teachers have received extensive training to these models. The project is currently implemented by ULI in cooperation with the MEHE and the Department of Education at UNRWA[1], funded by the Welfare Association.

Interestingly, an individual pilot project, Alaws Educational Network (AEN) (www.alaws2006.com/), was launched in 2005 as a discussion forum. In 2007, the AEN team aware of the importance of introducing e-learning models to allow higher secondary students the opportunity to interact with the educational materials in order to prepare them for the General Secondary Education Examination held every year during June.
WiziQ was chosen for developing VCR. The major factor in determining which to opt for is the financial resources since AEN is an individual project. WiZiQ (www.wiziq.com) provides a free virtual classroom environment for teachers to interact online and teach students. The key characteristics of VCR on WiziQ are invariably. It supports two-way audio communication and lives presenter video. This increases the interactive communication between the participants. Also, it works efficiently even with low upload and download bandwidth (minimum of 128 kbps bandwidth) and it is compatible with Moodle. Both

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[1] United Nations Relief and Works Agency

teachers and students can connect synchronously through WiZiQ, while they can use other asynchronous options available in Moodle. WiZiQ works well for the Moodle community and provides more options for blended learning (Cruthers, 2008).

In the initial stage, AEN team carried out several training courses in how to use WiziQ for 7 teachers with different specialist (English, Chemistry, Math, and physics). Those teachers become Training of Trainers (TOT). Now, 50 teachers are regularly participating in preparing materials in various formats such as PDF, PowerPoint, Documents, Flash files and videos.
The site bids a variety of methods of e-learning process including VCR, discussion forum and e-training courses. The VCR provides students with synchronous live classes in different subjects such as English, Physics, Mathematics, Chemistry and Arabic language where students can interact with the tutors, watch, listen, and ask questions. Alternatively, the prototype provides an asynchronous tool that allows students to records the class with all its activities and makes its available for the students to complete the course on their own time and schedule, as many times as they want, without live interaction with the tutors.

Other services provided through AEN site are including: organizing e-training courses for teachers in course lab, instructional design, flash photo shop, dream weaver. More Recently, AEN team has conducted online training course in how to utilize Moodle in an effort of combining it with WiziQ. Moreover, there is a room for counselling services and psychological support. Regular meetings with a specialist address the problems of students. Participants are largely anonymous. This allows students especially girls to talk a bout their problems and express opinion without any fear. The administrator puts the session schedule for a date and time for the participants through e-mail or in AEN webpage. Reminder service distributes reminder messages to the participants a few hours before every session. The session begins with a short preamble by the class facilitator. The main areas of the VCR interface are explained to the learners, the whiteboard features are presented briefly next. Any one has unsuccessful experiences to capture the complete course by live session; the recording feature is available to all students to revisit the course as required. The session concludes with a rich and useful discussion, activities, assignment and quizzes.
It is noticed that the number of students enrolling for VCR is on the increase. In 2007, the pilot started with 500 participants and now there are 2500 students and 50 tutors. This is a positive indicator that many more potential learners would be adopted the e-learning methods. VCR is being used extensively among students between March and June. This period is important for the higher secondary students to prepare themselves for the general examination.

4. Methodology:

The main aim of this paper is to investigate the potential of VCR to support the learning process for higher secondary students in Palestine through addressing the following questions:
What are the perceptions of students regarding the usefulness (relative advantages) of VCR?
To what extend do students ready (self-efficacy and willingness) to adapt to learning through VCR?

What are the main challenges will be facing the introducing of e-learning approaches in Palestine?
A questionnaire was developed based on literature related to the e-learning context. The questionnaire was targeted the higher secondary students actively attending the VCR sessions

in AEN. The questionnaire consisted of three parts. In the first part, participants were asked about their general information. In the second part, the participants were asked about their readiness (self-efficacy and willingness), perceptions of the usefulness, and challenges of implementing VCR. Participants were also asked to comment on the questionnaire in their native language in the third section.

Content validity was used for the questionnaire where three experts in e-learning were asked to provide their judgments on the items of the questionnaires. Positive feedbacks were received and some minor revisions were made to the instrument according to their suggestions. The reliability of the constructs, that is, the extent to which the items in the questionnaire are related to each other (Sekaran, 2003), was examined using Cronbach's alpha values. As summarized in Table 1, all values were above of 0.70 which are good (ibid).

Table 1: Reliability of the constructs

Constructs	Items	Cronbach's alph
Usefulness	5	0.85
Self-efficacy	4	0.78
Willingness	4	0.84
Challenges	4	0.75

5. Data Finding and Discussion:

Data from 100 respondents to the questionnaire were analyzed using descriptive statistical techniques. All students are at high secondary class who are around the age of 18 years. 70% of the overall students who responded to the survey were female and 30% male. The highest percentage of students, at 53% assessed themselves as experienced in using Internet and 47% as having intermediate experience. The findings also revealed that 66%, of the students have access normally to the Internet on a daily basis and 34% who accessed the Internet twice a week. However, this does not reflect the real situation in Palestine, but this reflects the composition of the sample, a digital divide exists and it is not possible to resolve this in the near future as in many countries. Investigating the locations for accessing the Internet revealed that 52% of students access the Internet at home, while 28% at a café and 20% at friend's home. It seems that schools are a considerably weak source of Internet service provision as the MOHE does not allow schools to use their budget to connect to Internet (Wahbeh, 2006). Several governmental schools, however, seek donation from the local community for Internet connection.

In the remainder of the questionnaire, participants were asked to score a series of statements under four different theme along a Likert scale running from "Strongly disagree" to "Strongly agree" – results for each theme (Figure 1) are also discussed below:
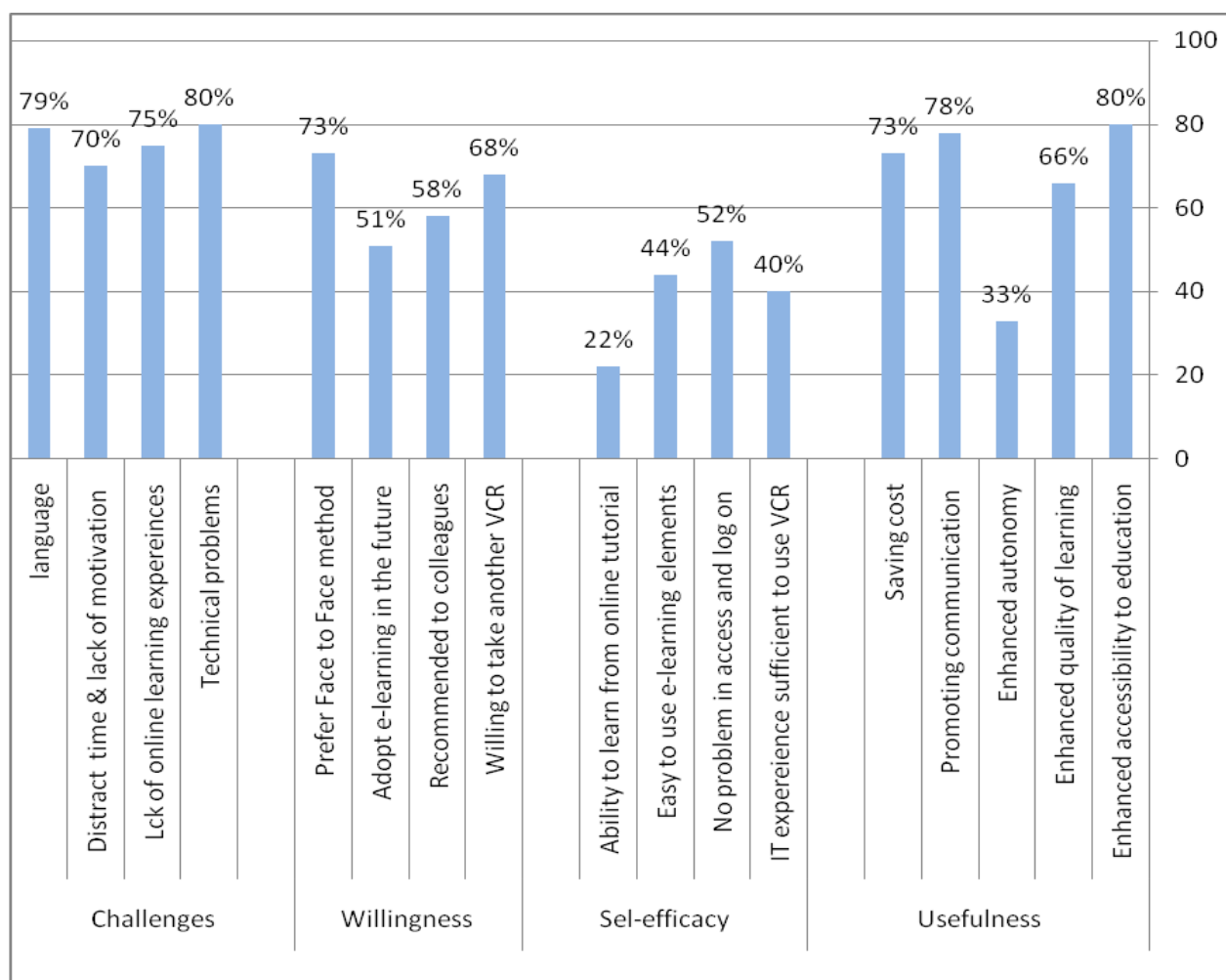
Figure 1: Students' opinion (strongly agree or agree)

5.1 Usefulness

Overall respondents have a high positive perception of the usefulness of the VCR (Figure 1). Over 80% of students agreed that VCR enhanced accessibility to education. For Palestinian, the most advantageous aspect using the VCR is to help them overcome all the restrictions and difficulties regarding their movements to schools by facilitating access to education at anytime and from anywhere (24/7 access). This flexibility will increase access to education for all learners (Watson et al., 2204) since they can learn online without the need to cross the risky check points in order to attend the traditional classrooms.

Respondents were also asked about whether they thought that: "the VCR enhanced the quality of learning". 66% of students "strongly agree" or "agree" that VCR helps learners understand the contents better than in physical classrooms. They appreciated that VCR provides interactive instructions in a wide-range of text, diagrams and images with video and sound which makes learning effective and more interesting than traditional methods of learning (Cruthers, 2008).

A positive feature of e-learning is that it enhanced learners' autonomy. The views of the students about this aspect were somewhat mixed. Only 33% of respondents agreed and 27% neither agreed nor disagreed, but 40% of respondents disagreed. Since Palestinian students

come from traditional teaching/learning methods where the teacher is always in control, perhaps not all students feel that are able to learn independently and take the responsibility of their own learning. For those students, using VCR might lead to a decrease in learners' motivations and their engagement in the learning process. To enable learners to become self-motivated, self-reliant and self-managing (Johnston et al., 2005), it should be emphasised here on the implementation process mainly at the initial stage. There is a need to create awareness among the educationists and students to change their attitudes and bring their attention to the potential of these models to improve the learning process.

Another important advantage of using the VCR is 'promoting communication' (Rozgiene et al., 2008). The majority, being 78% of students reported that through discussion forum, chatting, emails offered by VCR learned a lot from other students.

VCR can significantly 'saving cost' for students (73%). The VCR reduces travel costs which is relatively expensive in Palestine due to the movement restrictions. What are required in the initial stage to participate in the VCR are a computer and an Internet connection which are become available and affordable to most individuals. For students, it also lessens depending on the private lessons which become widely spread in Palestine. This finding indicated that the cost of attending the VCR was acceptable for students.

5.2 Self-efficacy

Palestinians, particularly the new generation, can be considered technology-savvy, as ICT pedagogy is integrated into the Palestinian curriculum from grade 5. However, the findings have shown that only 40% of students believe that their previous IT skills are sufficient to use VCR efficiently and 52% of the students agree that they have no problem in access to VCR and log on (Figure 1). In addition, participants were asked about their abilities to use the e-learning tools. All the participants had various experiences with VCR software; only 44% of students feel that it is 'easy to use AEN elements including VCR, discussion forum, chatting rooms, blogs. Accordingly, most students are not completely confident about their abilities to use online learning elements offered by the site. Furthermore, only 22% of students considered the e-training and online tutorial are helpful. The results suggest that participants might prefer personal coaching by their teachers rather than online training to become familiar with the new e-learning technologies.

5.3 Willingness:

68% of students are keen to take VCR course if relevant to their learning needs, 58% would recommend this as a method of study to their colleagues, and 73% agree that they prefer the traditional class and the face to face interaction between teacher and learner. The results suggest that it is imperative that VCR should be seen as supplement and not replacement to the traditional learning methods and therefore, introducing blending learning will be more appropriate than full e-learning method. This finding consistence with prior studies (Watkins et al., 2004; Aydın and Tasci, 2005; So and Swatman, 2006).
Still, the participants were questioned about their intention to adapt to learning thorough VCR. Only 51% of students show willingness to adopt the new paradigm in the future.
The above findings from self-efficacy and willingness sections suggest that students may not be as ready as expected. They will need enough time to adapt the e-learning paradigm (Rogers, 2003).

5.4 Challenges:

There are many challenges to be faced in implementing VCR for students in Palestine and more generally in developing countries. 80% of students concerned that they have technical problems in using VCR and it seemed that learners are more likely to benefit from asynchronous learning methods rather than live sessions. For successful a transition to e-learning, school should have access to reliable and affordable bandwidth and robust network. The MEHE should play a leading role in developing the ICT infrastructure. Although the Strategic Development Plan of MEHE includes a target that on average about 210 governmental schools will be connected to the Internet annually, MEHE should set up practical procedures to determine the needs and requirements of schools and give priority to those in rural areas so that they are not excluded from the plan. The MEHE is highly recommended to make more collaboration with public private partnerships to improve the ICT infrastructure. Further, The MEHE should take full advantage of various initiatives taken by the international community to assist Palestine in their bid towards adoption of e-learning such as the UNESCO, World Bank, UNDP.

Lack of experience to use online learning technologies is also an obstacle for learners to participate in e-learning effectively. 75% of students indicated that they need for training. Students have to be trained in using ICT-based learning components such as multimedia, chat-room, wikis, blogs since their Internet and computer skills or experience online learning through their professional development are insufficient to use e-learning elements effectively (blackboard K-12, 2009).

Although, many students might have access to the VCR, they tend to use them for entertainment purpose rather than for learning (El-Zayat and Fell, 2008). 70% of students expressed their concerns that VCR distracts students' time. A challenge in this endeavour is how to enhance learners' motivation for self-study. It is very difficult in a short time to adapt a new learning style. Therefore, willingness to change is required. Boulton (2008) states that students need to develop a new range of skills such as managing their own pace of learning, learning how to become autonomous independent learners, and taking greater responsibility for their own learning. She added that collaborative with parents should also be considered as they are going to take on the role of supporter for students using e-learning from home.

Moreover, teacher encouragement, timely responses and interaction seems to be significant to enhance learners' motivation (Johnston et al., 2005; Patronis, 2005).
Another obstacle of using e-learning is language (Elango et al., 2008). Respondents tended to agree overall, that 79% of students feel confused in using ICT terminology in English Language. Arabic language was preferred. This finding was congruent with other countries such as Thailand a high demand for adequate Thai online course ware (UNESCO, 2004).

6. Conclusion

In this paper, VCR model of e-learning for higher secondary students in Palestine are presented. This study has demonstrated that the unique situation in Palestine lead Palestinians to perceive VCR system as advantageous and therefore have a positive attitude towards adopting the e-learning. However learners are not ready yet. Overall VCR is not simply being used by students as a replacement to the face to face teaching methods, but it is recognized to be as a supplement.

There are many challenges being faced in implementing a VCR in Palestine including digital divide, technical limitations of the network, lack of e-learning technologies skills, lack of motivation and language.

Palestine is still at the stage of planning e-learning. It is clear that there is a need to assess the schools readiness to adapt this model. It should also be noted that population sampled might be not best represent students. It is desired that in future, more participants will be analyzed and to the deepest detail.

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