

Towards the Effectiveness of Utilizing ICT in Enhancing Language Learning Process: A Pilot Study

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ABSTRACT

In the educational arena, technology in general and the Information & Communication Technology (ICT) in particular have become one of the significant tools in enhancing language learning process. Furthermore, the support to realize Vision 2020 has inspired many language practitioners to integrate ICT into their language classes. However, many questions have arisen demanding for answers: Can ICT really enhance language learning process? How effective can it be? Can ICT change students' attitudes towards language learning? And most importantly, what are the technological resources and tools that can be effectively utilized? In language education, these questions have provided a new dynamic field of research. On this basis, this paper will move towards uncovering the effectiveness of utilizing ICT in enhancing language learning process. This move will go beyond the conventional 'board and chalk' approach; thus, it is vital that relevant theories or models of learning are provided. ICT resources will also be identified in order to demonstrate the significance of ICT in maximizing student-centered learning (SCL) approach. Findings of research are gathered from questionnaire and interviews which are conducted in University College of Engineering & Technology Malaysia (KUKTEM), Pahang, Malaysia.

1.0 Introduction

These days, the swift evolution and spread of new technologies have displayed a more widespread use of technologies in language education. The research on the crucial role of technology in language education has been conducted for more than three decades, and numerous articles have been written which highly accentuated the importance of technology in assisting second language (L2) learners (Koutsogiannis & Mitsikopoulou, 2004). As a repercussion, we believe that technology undeniably occupies a greater role in the process of enhancing language teaching and learning. The challenge, however, lies on how the available technological resources such as multimedia facilities, language software and the World Wide Web (WWW) can be effectively exploited and harnessed (Warschauer & Healey, 1998). Thus, it is the aim of this paper to demonstrate the effectiveness of utilizing Information Communication Technology (ICT) in enhancing the process of language teaching and learning as commonly practiced in KUKTEM.

2.0 ICT in KUKTEM

KUKTEM is well-known for its e-based structure. This structure is designed in order to take on the challenge of achieving Vision 2020's objective in bringing the country towards a *global information and communication technology*, and to implement Malaysia's ICT policy of providing "ICT for all students", utilizing "ICT as a teaching and learning tool" and increasing "productivity, efficiency and the effectiveness of the management system" (ICT Policies, n.d.). Vision 2020 aspires to bring the country into a culture that manipulates the technology for the betterment of its people, and education is one of the channels to infuse such culture. Mohamad Hassan (2001) states that the stipulated "technological culturalization" in educational institutions can only be achieved if the organization itself carries an attitude in moving towards the change, and KUKTEM carries this attitude so vehemently because she determines to refine such culture.

In reaching this technological culture, KUKTEM is working hard to be the first public university in Malaysia to fully exercise the paperless environment in its administration as well as in teaching and learning experience. In fact, KUKTEM has received a few awards of recognition and achievement¹ for its effort to be an e-based university. To mark the university as a distinctive e-based university, the management has equipped the university grounds with ICT resources and multimedia facilities, with the intention that not only the staff, but also the students are exposed to the world of ICT.

2.1 ICT Resources for Language Learning in KUKTEM

KUKTEM is widely wired to the network of the WWW. In most part of the campus such as at the faculties, students' accommodation, engineering laboratories, knowledge management centre and lecture rooms, wireless network connection is provided with the intention that students and academic staff are able to connect to the cyberspace for research and study purposes at all times without worrying of having to carry network cable.

In 2003, Multimedia Language Lab (MLL) was built to aid language learning and teaching process, and to date, there are 8 MLLs and a mini theatre for language learning purposes. Each lab is equipped with multimedia facilities such as computers, LCD projector, VCD, CD and cassette players, headphones, microphone, language software, connection to the WWW, ReNet software and TLS system, a teaching technology from Germany. A range of language and communication VCD and CD collection is available as well as a few sets of video cameras, digital cameras, television and other multimedia facilities. The community of KUKTEM is also provided with electronic communication tools such as e-mail, e-memo and e-forum, as well as electronic space used for knowledge sharing, and teaching and learning purposes namely Files Bank, K-Bank, k-portal, e-learn and e-brary. All of these ICT resources and multimedia facilities provided to language teachers and students are meant for them to be utilized during the language learning process.

One of the crucial consequences of this provision is that all language teachers in KUKTEM are encouraged to fully utilize these facilities; they turn from a person who is afraid and rigidly rejects ICT to a person who constantly and vigorously applies ICT. The

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integration of ICT into language classes and syllabi has been vast and, therefore, has created a different way of learning and teaching language. We believe that this assimilation has brought students to a different level of experience, and indirectly, could ensure an effective and successful language learning experience for the students. It is significant to note that countries [in Asia] such as Hong Kong and Singapore have strategized and implemented for a number of years the integration of ICT into their school curriculum which included the implementation of innovative policy to reform their educational practice in order to meet the challenges and changes of the global technology (Richards, 2005). Hence, the extensive use of ICT in language teaching and learning at KUKTEM is a step to be part of the community who looks forward for a different experience in language education.

3.0 Second Language Theories of ICT in Language Learning

Oliver (2003) states that the notion *communication* becomes part of *information technology (IT)* (thus, producing ICT) due to the realization that technology has become significantly relevant not only “as a device for handling information,” but also “as a means of communication.” Consequently perceived as a communication tool, ICT positions itself comfortably in language teaching and learning.

The Education Review Office of New Zealand (2001) states that the history of ICT implementation in educational institution can be seen as a continuum, which dated back for more than thirty years, beginning with access to computers, progressing through access to the Internet and networking, upskilling teachers and students, and ending with the full integration of ICT into teaching and learning. ICT integration in language teaching and learning begins with the application of computers. Generally, the usage of computers in language learning, commonly known as computer-assisted language learning (CALL), can be divided into three main stages: behaviouristic CALL, communicative CALL and integrative stage CALL (Warschauer & Healey, 1998). Chafe (1999) states these stages actually followed the evolution of language learning approaches.

Rooted in behaviourist learning model which emerged in 1950s, behaviouristic CALL featured repetitive language drills known as drill-and-practice which focused on grammatical explanations, translation tests, and extensive drills. At this stage, computers were used as a mechanical tutor for drill exercise and were considered more as a machine to assist teachers in the language classes (Warschauer, 1996, Warschauer & Healey, 1998).

Communicative CALL came into view in late 1970s which corresponded to cognitive theories that stressed learning is a process of discovery, expression and development. Technologies, which support cognitive approach, allow learners maximum opportunity to be exposed to language in meaningful context and to construct their own individual knowledge which is materialized through multimedia language software and simulation activities (Warschauer & Healey, 1998). Hence, computers were not perceived as a machine, but as a tool, a stimulus, and a workhorse to support learners when they are working with each other in language classes to build intrinsic motivation and to foster interactivity (Warschauer & Meskill, 2000; Warschauer, 1996).

According to Warschauer (1996), integrative approaches to CALL are founded on two important technological developments: the multimedia computers and the Internet – the

ICT elements. This new perspective surfaced when many teachers were moving towards a more sociocognitive view which placed greater emphasis on the social aspects of language acquisition; language learning is viewed as a process of socialization in authentic social environments where students are able to create meaning and knowledge based on the real world (Warschauer & Healey, 1998; Warschauer & Meskill, 2000). It is believed that the wide range of informational and communication tools (ICT) such as the Internet now potentially at the fingertips of every learner can become imperative to assist them in their language learning process (Warschauer & Healey, 1998).

These changes in the paradigm of using CALL in language education flow from the economic and social changes; one of it is the evolution of the computer which leads to the emergence of ICT. Because of these changes, the integration of ICT is seen as a significant facet in ensuring effective language learning process, and integrative CALL emerged to materialize this. Teacher's role has changed from playing the dominant role in the class to facilitating learners' individual learning process. Learners gain more control in their own language learning process through the promotion of student-centred learning (SCL). The manipulation of ICT in the language learning process is also believed to enhance learners' attitudes towards language learning. Usage of ICT is deemed to increase learners' motivation and self-confidence. These factors led us to believe that the available multimedia tools in KUKTEM have effectively aided our students in their language learning process.

4.0 Discussion

4.1 Importance of ICT in Ensuring Effective Language Learning Process

This research was conducted in KUKTEM. Questionnaires were distributed to 100 randomly selected second year degree students from various faculties which include students from Civil Engineering, Electrical Engineering, Chemical Engineering, Mechanical Engineering and Computer Engineering faculties. 56% of the respondents are male students whereas the remaining is female students. The findings show that 34% of the respondents have been exposed to the usage of ICT in English classes before they entered KUKTEM whereas 66% does not have that exposure. Students who were exposed to ICT in language classes claimed to have the exposure for about 2 years.

4.2 ICT Resources for Language Learning

With respect to technology, this research intends to comprehend whether ICT is more preferable for students than the conventional tools. ICT has been introduced in KUKTEM because it is believed that it can yield positive effects in the learning process, and it can help teachers to support students' activities such as speaking, listening, reading and writing in English. Furthermore, students in KUKTEM are given frequent opportunities to manipulate ICT in language classes to gather information, share knowledge, express ideas, and become more independent in their presentation skills.

Clearly, ICT-based activities appear to create a very special atmosphere of great engagement and dedication on the students' part when they are exposed to ICT tools. It seems that computer works is very motivating, and even the ones who are weak in English get highly involved in language tasks. Using Internet inside class encourages all students to search for the information they need, and serves as a genuine opportunity to practise the

skills of argumentation and presentation of specific data as the Internet is the richest source for authentic English language materials.

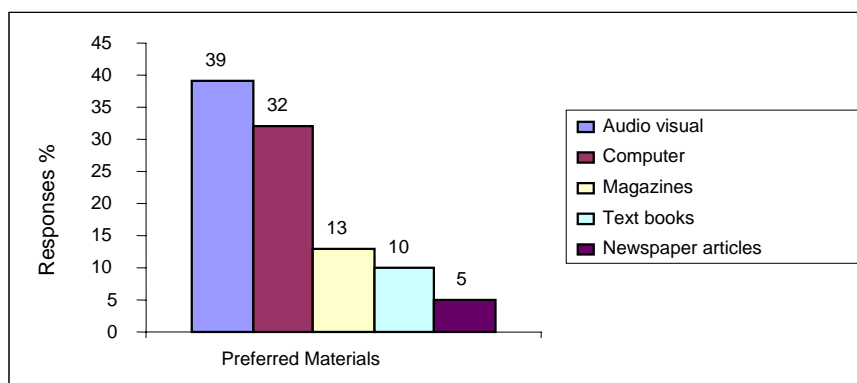


Figure 1: Preferred Materials for Language Learning

Figure 1 demonstrates students' preference in which learning materials they prefer to utilize in the language classes. The survey conducted indicates that more than 60% of the students have chosen ICT materials as their language learning tools. Audiovisual tools which include cassette player, radio, video and use of headphones are mostly preferred as well as computer peripherals. This shows that at present, students prefer using ICT in their language class compared to using traditional learning materials such as newspaper, magazines and textbooks.

4.3 Promotion of Student-Centered Learning (SCL)

The implementation of ICT in language classes is not an end in itself, but a strategy to improve the quality of language learning experience. One of the strategies is to promote an SCL environment, a method of learning which Cannon (2002) states could expand “students’ ways of thinking about learning” since SCL emphasizes on activities such as “planning, learning, interacting with teachers and other students, researching, and assessing learning.” Moreover, Warschauer & Meskill (2000) purports that ICT is “a powerful tool that creates dynamic classroom environment than the traditional classroom.” This dynamic class environment makes teaching more flexible and creates a de-centred classes featuring activities such as project-based activity, collaborative learning and peer tutoring that allow students to build their own explanations of how language works; therefore, controls their own learning in the class. One of the language teachers in KUKTEM stated that the use of ICT in education could motivate the students who grow up in the modern era. They would be more convenient to manipulate the facilities without relying on 100% input or responses from the instructor. Hence, this leads to a less dominant teacher-centered environment.

Our survey found that, generally, more than 70% of the students felt the integration of ICT resources into some part of their learning activities does promote SCL. Figure 2 demonstrates that 60% of the respondents used internet to search for information in and outside the class. With the availability of the WWW, students do not totally depend on teachers’ note, but they utilize the Internet to search for information and extra notes. Sometimes, their effort to search for materials in the Internet could be surprising when

they present the outcome. The authenticity of vast reading materials interests them to independently gather information from the Internet.

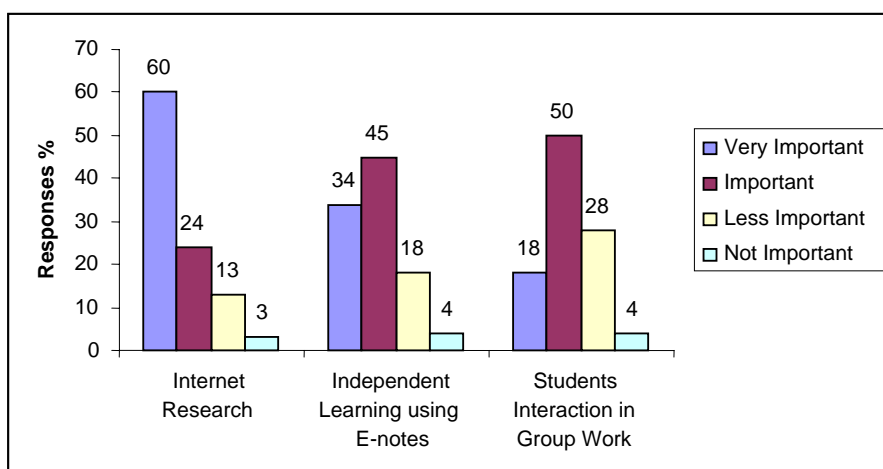


Figure 2: Students' Opinion on SCL Activities

With the wireless network provided in KUKTEM, this has encouraged students to fully utilize ICT in order to prepare notes for their class activities even from their hostel. Students are able to download their notes from e-learn and use the notes inside the class. More than 70% of the respondents felt that e-learn notes are very important in their language learning. These practices have helped to strengthen independent study among language learners in KUKTEM, and it strongly enhances SCL. Scholnik & Kol (1999) confirms this finding when they found that learners are more likely to develop and refine their ICT-based output than paper-based output, and are able to develop it collaboratively and independently. Bullock's findings (2000) also state that ICT plays a vital role in developing students' ability to learn independently, which evidently encourages SCL.

In contrast to the usage of traditional tools, more than 70% of the respondents felt it is important for them to use computer peripherals inside the class. They felt very comfortable using ICT in their presentation and also discussion because many of the students gave positive feedback that ICT has maximized their participation in group work and during presentation. Besides, the MMLs in KUKTEM are designed such as in cluster arrangement with the intention that students are able to manipulate the space for active interaction and communication with their friends and the teacher.

Chafe (1999) points out that interaction in language in meaningful situations increases the opportunities to gain input to learn the language. The utilization of ICT resources such as the Internet and language software can place learners in a meaningful situation of the real world. This offers learners more opportunities to control the learning environment, thus, promoting student-centred learning. The Education Review Office of New Zealand (2001) states that ICT also develops SCL by developing students' creativity, and the usage of Internet offers more opportunities for learner-centered based language learning environment by increasing motivation and connections to the real world (Elangsegaran, Zanariah & Krishnasamy, 2005). This research, therefore, has given us another strong believe that using ICT in our language classes could promote SCL.

4.4 Positive Development of Students' Attitudes Towards Language Learning

Developing positive attitudes in a student towards language learning is not an easy task. University students often feel bored having to learn grammatical structure all over again after years of learning in school. However, with the appropriate exploitation of ICT resources in language classes, language learning process can be exciting and fun, hence, could trigger positive attitudes in students to learn English language.

Results from our survey showed that manipulation of ICT in language classes does help students to develop positive attitude towards language learning, which is similar to the findings found by Warschauer (1996b) that states students project positive attitudes when using computers in language classes. 77% of our respondents believe ICT has positive impacts to motivate them in gaining interest in the learning process; this is supported by Perez (n.d.) who indicates that ICT, particularly Internet “awakens the curiosity and learning enquiry” (p.1).

As ICT offers an alternative and wider communication inside and outside of classroom, Warschauer (1996) finds that students are highly interested to communicate with the native speakers in other countries, as well as with their classmates and their teachers. It is interesting to note that students are not restricted to practice the language in the class only, but now they have other alternatives to practice English with the help of ICT. Elangsegaran, Zanariah & Krishnasamy (2005) state Internet technology has the potential to motivate learners to learn English with less pressure and anxiety, and moreover, with ICT, students can control their learning. Their observation shows that Internet offers better students' involvement and participation, and hence, increases their motivation in language learning. They add that internet technology also gives positive impact in changing students' attitude towards language acquisition.

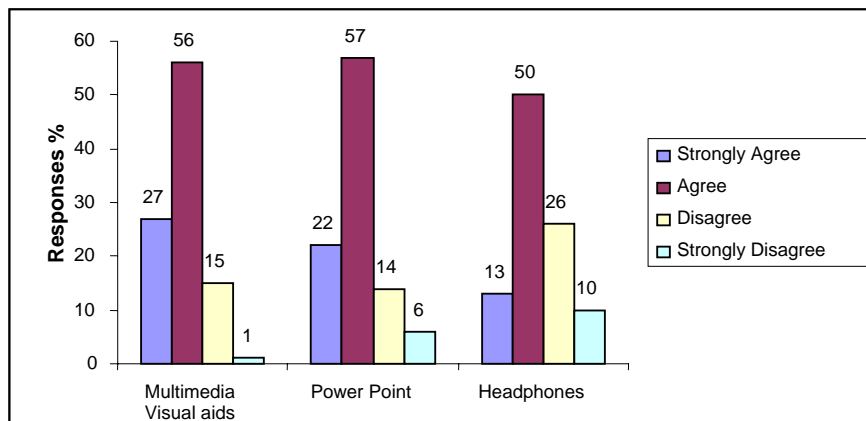


Figure 3: The Positive Effects of Using ICT Tools

Figure 3 shows that ICT tools found in labs such as multimedia visual aids (video capture, graphic works, media clips), PowerPoint presentation, and headphones certainly have positive effects on students' language learning. Majority of the respondents agreed that effective use of visual aids has made them more creative during their presentations in class. This finding is similar to the research conducted by Warschauer (1996b) and Bullock (2000) which also show that ICT can help students to become more creative, and in fact, the work produced is better as ICT allows them to explore ideas freely.

Majority of our respondents also agreed that their level of self-confidence has been upgraded when PowerPoint is used. When students use slides to assist them in their presentation, the slides could attract the attention of most audience, and hence give the chance for the students to be more confident standing in front of the audience. This is especially true when animation, audiovisual effects, multimedia graphic and attractive colours are included in the slides presentation. Scholnik & Kol (1999) confirm that the use of presentation software such as PowerPoint plays a role as a motivational factor in giving the students more self-confidence during oral presentations because “the computer mode seems to minimize their tension and feeling of insecurity.”

Figure 3 also demonstrates students’ positive responses on headphones usage. Interaction using headphones offers the respondents the chance to express their ideas better. In other words, it is no doubt that most students find it rather threatening having involved in eye-to-eye interaction with the teacher, hence, letting no flow of ideas. Our finding is validated by Nik & Adams’ study (2005) when one of the respondents states that “I am more confident when nobody looks at me when I express my opinion.” However, with the use of ICT tools, it is evident that ICT fosters better interaction and open communication in a less threatening environment, thus, facilitate the language learning process.

4.5 Improvement in L2 Enhancement

Another essential outcome for the implementation of ICT in the language learning process, we believe, is language improvement among L2 learners. A research conducted by the Education Review Office (ERO) of New Zealand (2001) notes that there is little improved evidence in students’ achievements in term of proficiency; however, manipulation of ICT is able to develop essential skills in students such as communication skills, information skills, problem solving skills, social and cooperative skills which are significant in assisting learners in their language learning experience.

In contrast to the research by ERO, Koutsogiannis & Mitsikopoulou (2004) states that the Internet is able to enhance students’ language proficiency because Internet is able to give them a sense of fluency in L2, and thus, serves as literacy practice which has influenced their relation to the language. The researchers provide evidence in which conversation and exchanges in the chat room indicate development of language skills and literacies. Thus, communication in the Internet offers a considerable potential not only for language socialization but also for language learning.

From our survey, 86% of students agreed that manipulation of ICT in the language classes has helped them to improve their language enhancement particularly through the usage of e-memo and group conferencing to communicate with the lecturers and other students. An interview with an English lecturer in KUKTEM indicated that ICT does help students’ language learning enhancement; however, she is disappointed that there is little effort from some of the students to improve their language proficiency independently outside the class although the multimedia facilities are widely provided for their convenience.

The ICT tools equipped for language learning in KUKTEM is innumerable. These multimedia tools are constantly used by teachers in their language classes. Students were asked to identify which ICT resource that has assisted them in enhancing their language ability, and many students indicated the Internet as carrying the significant role. Table 1

shows students' preference on the ICT resources that could help enhance their language learning process.

Table 1: Students' Preference for ICT Resources that could help Enhance Language Learning

ICT resources language learning tool equipped in KUKTEM	% of importance in enhancing language learning
Internet	34 %
Online grammar exercise	14%
PowerPoint	13%
Language Software	13%
Online Dictionary	12%
E-learn notes	8%
Microsoft Word	5%
Word Pad	1%

This shows that online-based ICT tools are preferred by students in enhancing language learning as compared to the non online-based ICT tools. This is probably as Elangsegaran, Zanariah & Krishnasamy (2005) mention that ICT tools such as Internet, e-mail and online discussion encourage and facilitate deep exploration, interactive communication and collaborative knowledge construction among language learners. Internet, particularly, fosters information processing ability in which learners need to construct their own knowledge.

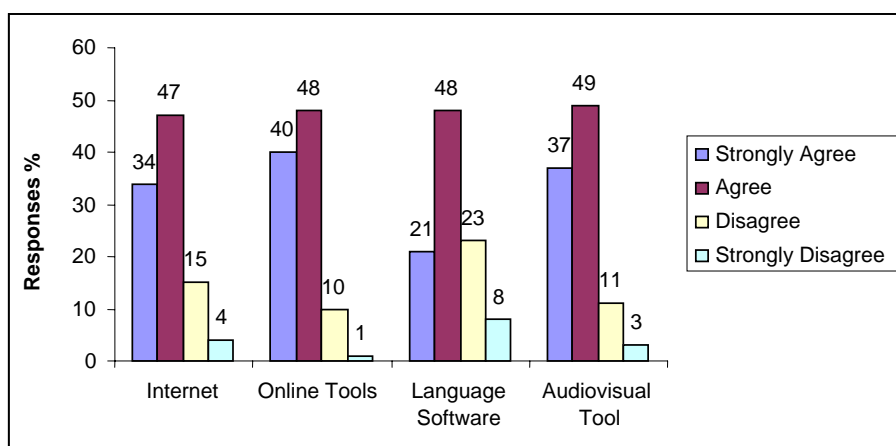


Figure 4: ICT Resources that has helped Students' Language Development

Figure 4 further demonstrates the impacts ICT resources have on the enhancement of language learning. Almost 50% students agreed that Internet can improve their reading skills; this is because for some activities namely project work, students are given ample time to browse the Internet and look for suitable materials for their project. The innumerable reading materials in the WWW have given opportunities for students to develop their reading skills. Under supervision, students conducted Self-Access activities to further develop their language skills. During this Self-Access activity, students are provided with a list of website addresses to online dictionary, online grammar exercises and other online language skills exercises. These online exercises are not only fun but also have helped students to improve their language at their own pace.

The MLLs in KUKTEM are equipped with several language software, which include pronunciation software, study skill software and writing software, where students can access to them whenever they are in the MLLs. Many students believed that having all these language software particularly the pronunciation software has assisted them to improve their pronunciation and language skills. In addition, to develop listening skills, students are exposed to the usage of audiovisual tools. Activities such listening to songs, watching videos, and involving in group conferencing using the TLS system (whether in a group, as pairs or individually) are conducted with the students. They found it to be of great help in developing their listening skills.

Nonetheless, many research have also provided evidence that the integration of technology into language classes has no significant improvement in language learners' L2 enhancement (Koutsogiannis & Mitsikopoulou, 2004). Yet, our small scale research has proven that utilizing ICT in language classes does have a significantly effective result on students' L2 enhancement, at least in our institution. However, teachers should bear in mind that ICT should be integrated creatively into the language learning process in order to ensure positive results.

4.6 Limitations of Using ICT in Language Learning

Regardless of the proved findings by a number of research on the positive effects that ICT has in encouraging language learning, there are still some inevitable limitations. For instance, this research found that unstable Internet connection can discourage one's effort to search for information. In fact, more than 50% students agreed with this statement. In KUKTEM, students rely heavily on the Internet in their learning process, as all the subject notes are uploaded in e-learn, and most of the reference books can be obtained from e-brary.

Data lost is another limitation that students would have to face when dealing with ICT. It is reported that data loss can de-motivate students particularly when it comes to completing their assignments. This data confirms the results found by Bullock (2000) in which the respondents did feel the frustration having lost their data. One of her respondents commented on the usage of ICT as "*...much more fun ...only if you have a decent computer though.*" This further illustrates that the usage of ICT is indisputably helpful in completing one's task, only if there is no technical problems being the barrier in the learning process, which could replace enthusiasm and motivation with frustration.

5.0 Conclusion

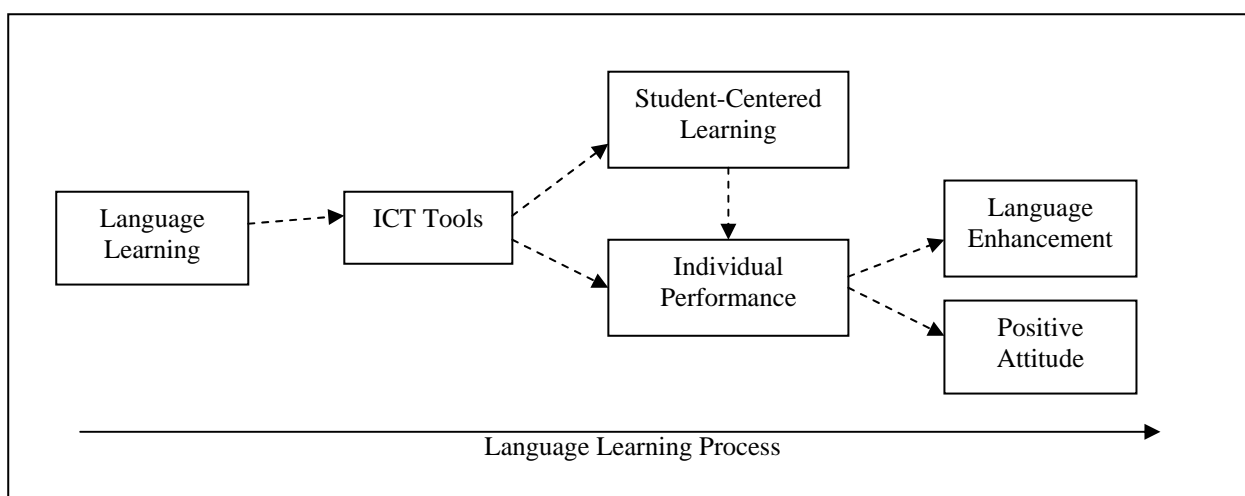


Figure 5: Model of Language Learning by Utilizing ICT

Advancement in the computer technology especially in ICT has brought positive impacts and influences on learners, language educators and society. With this new technology, language learners are exposed to the usage of ICT resources and multimedia facilities which promotes student-centered learning (SCL) and improves individual performance. In addition, the implementation of SCL has also significantly boosted individual performance in terms of language enhancement and positive attitudes (refer to Figure 5).

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