

Utilizing ICT to Promote Motivation towards Language Learning among Engineering Students

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Abstract

Rapid advancement of technology and the impact of globalization have breathed new changes into our lives. These changes bring new challenges to every aspect of life in the digital world we live in today. Being part and parcel of the digital package, Information and Communication Technology (ICT) plays a vital role to ensure that the needs for these new tides are met, particularly within the area of language education. Consequently, many language educators are urged to integrate ICT into their language classes, above all, as a means for student motivation. On this basis, this paper attempts to unearth the potentials of language learning enhancement through the utilization of ICT as motivational tool. Thus, this move will look beyond the conventional 'board and chalk' approach at language teaching and learning. Hence, it is essential that we identify the ICT tools that can motivate learners and their significant effects on student motivation in language learning. This study is conducted in KUKTEM, Pahang, Malaysia.

Introduction

Taking the challenges of the globalization of information and technology in the educational arena, the utilization of ICT has been one of the essential parts of teaching and learning practices at Kolej Universiti Kejuruteraan dan Teknologi Malaysia (KUKTEM). This accentuation has prompted the management to equip the university with state-of-the-art multimedia facilities and encouraged not only the lecturers but also the students to be ICT-savvy. As a repercussion, ICT has greatly and positively changed and shaped the teaching and learning process in KUKTEM, particularly in language learning process. In language classes, the learning process through this extensive and smart investment of ICT tools, which has been extensively practiced, has brought students into a different realm of experience. Munchú (2002) states that correct manipulation of ICT such as multimedia and Internet in language learning experience can be stimulating and engaging for learners, empowering them to control the experience themselves. We believe that this empowerment can further motivate learners towards language learning. With this in mind, this study attempts to look at the possible motivating factors of the use of ICT in language learning particularly among engineering students.

Language Learning and ICT

ICT holds an important role in the evolution of language learning approach, from the emergence, perception and usage of computers as machines to the evolution and utilization of multimedia and cyber-based facilities as learning and teaching tools. Three principal learning theories that demonstrate the relevancy and necessity of ICT in their tenets, and consequently, utilize and apply ICT are behaviorism, cognitivism and constructivism (Cannizzaro & Daniella, 2001). Rooted in learning model which features repetitive language drills, behaviorism regards computers as mechanical tutors for learners to practice drilling exercise, and as machines to assist teachers in the language classes (Warschauer, 1996; Warschauer & Healey, 1998; Cannizzaro & Daniella, 2001). On the other hand, cognitivism, which emphasizes on learners' mental processes such as schema, strategy and metacognition during the learning process, perceives computers not as a machine but as a tool, a stimulus and a workhorse to aid learners in language classes. Since learners need to process, receive, retrieve and assimilate the information, computers are judged as cognitive and personal tools to be utilized by learners to build intrinsic motivation and to foster interactivity (Cannizzaro & Daniella, 2001; Warschauer & Meskill, 2000 & Warschauer, 1996). The third learning theory, constructivism, which is heavily influenced by the advances of artificial intelligence and information science (in this case), places an emphasis on the use of computers as a means of communication. As learning is perceived as a construction process of knowledge through contextual experience such as through mediation and negotiation of meaning, computers, or at this stage ICT-based tools, are considered as cooperative tools that learners can use to reflect on their language learning experience and negotiate meaning (Cannizzaro & Daniella, 2001). Constructivism also looks at the fundamental changes in the attainment of knowledge such as changes in the construct of motivation (intrinsic-extrinsic motivation).

As ICT is becoming essentially significant to the evolution of language learning approach in order to ensure a better and more effective language learning experience, not only as tools to be utilized by teachers but also by the learners, it is vital to know how ICT can actually assist learners in motivating them towards language learning. More importantly, in what way are the learners motivated to learn a language.

Language Learning and Motivation

To be motivated means to be moved to do something

(Ryan & Deci, 2000:54)

Motivation is one of the key elements in language learning. Ames & Ames (1989) define motivation in language learning "...as an impetus to create and sustain intentions and goal-seeking acts..." (as cited in Yeok-Hwa, 1998:1), whilst Norris-Holt (2001) states motivation as "...the learner's orientation with regard to the goal of learning a second language" (p.1). Different individual has different degree of motivation as well as different types of motivation. Nonetheless, in language learning, motivation is viewed as an important element because it can govern the efforts and acts of learners, and determine the correct attitudes of learners in order to achieve the goals and ensure success in language learning (Nakanishi, 2002).

In second language (L2) acquisition, the concept of motivation originated from school of thoughts such as social psychology and educational psychology. Since each individual requires different levels and types of motivation, it is interesting to find how the orientation of technology particularly ICT tools could assist to enhance motivation in language learning. Therefore, it will be unfair not to discuss the essence of motivational concepts and the relevancy of ICT as a tool and orientation for motivation. The discussion on these motivational concepts will focus on the intrinsic-extrinsic motivation theory by two prominent educational psychologists, Edward Deci and Richard Ryan.

Intrinsic Motivation & Extrinsic Motivation

The intrinsic-extrinsic theory is proposed by Edward Deci and Richard Ryan, educational psychologists who claim that in language learning, intrinsic motivation refers to a person's inner drive, wish, urge, impulse or interest to pursue or be involved in activities just for the sake of enjoying the pleasure derived from it (Ryan & Deci, 2000; Nakanishi, 2002). Learners are engaged in the activities simply for their own sake due to the satisfying and interesting factors obtainable from them. Therefore, ICT can play a part in engaging learners in the activities and holding their focus on the lesson when manipulation of ICT into language learning process can be attractive and appealing to attract students' interest intrinsically.

Extrinsic motivation, on the other hand, refers to a person's need to seek tangible influences and achieve external rewards from the activities carried out. They pursue an activity simply out of obligation for external contingencies such as to earn incentive or avoid punishment (Nakahishi, 2002). Ryan & Deci (2000) further categorize extrinsic motivation into four types which are placed in a continuum. At one end, the external regulation of extrinsic motivation is adjacent to motivation (absence of impulse or urge to do something). Therefore, at this stage, a learner is motivated to learn because of the imposed external factor namely learning for fear of failing. As the regulation moves towards the other end of the continuum, the external factors are becoming personally internalized, thus, integrated and assimilated into the learner's self. As such, the integrated regulation is nearing intrinsic motivation, and in fact, taking more similar characteristics of intrinsic motivation (Nakahishi, 2002). Hence, at this stage, learners are motivated to learn because of the external factor as well as the realization for personal significance, for instance, learning for the chance of having better career. Thus, an ICT-based orientation of

language learning activities could help to trigger motivation due to the realization of the importance of ICT for external as well as internalized rewards.

Potentials of ICT as Motivational Factors for Language Learning

Strambi & Bouvet (2003) suggest that ICT provides flexibility of material and learning tool as well as an abundance pool of information. As a result, learners are offered with different learning styles and learning environments that could promote interactivity, and more exposure to authentic materials. The American Psychological Association (APA) (2005) states when learners are exposed to tasks, positive attitudes can be triggered towards language learning.

According to Norlida & Supyan (2002), the potentials of the World Wide Web (WWW) especially in writing classes include access to web-based teaching and learning materials such as online exercises, online quizzes, reference materials, interactive computerized lessons which are beneficial to assist learners not only to improve their language use but also to support the writing process. The wealth of materials (with various elements of socio-cultural topics, current events, cross-cultural communication) found in the WWW for writing reference could elicit positive attitudes. Norlida & Supyan find that there are positive changes in students' motivation, confidence and anxiety level when students are exposed to such learning materials in writing classes.

In another research study, Allegra, Chifari & Ottaviano (2001) investigated whether the use of ICT could help stimulate students' creative thinking and in turn develop their creative potential in learning in general. They found that the learning environment which envisages the use of multimedia setting and telematic technologies could help improve students' divergent production of language skills. In language learning, particularly in writing classes, incorporating these technologies has been proven to stimulate students in expressing their creativity (Allegra, Chifari & Ottaviano, 2001).

In his study, Warschauer (1996) researched on the effects of students' motivation of using computer for writing and communicating. His focus was on computer-mediated communication (CMC). CMC provides the opportunities for learners to communicate not only in class, but also nationally and globally, through the use of electronic mail, computer conferencing, (and these days more multimedia communication media emerge such as chat room and blog). CMC enhances motivation for students feel less threatened to communicate and participate via the medium, and they are able to actively collaborate with other learners.

In exploring opportunities in a technology-enhanced language learning classroom environment, Hee-Jung & Sang (2004) findings illustrate that the application of technological tools such as computer hardware and software and the Internet in a classroom can reduce learners' level of stress and promote and motivate them to participate in the activities and learn English. This motivation is further enhanced when the learning environment involves interactive tasks, authentic tasks and materials.

The Study

The purpose of this study is to investigate the potentials of ICT tools as motivational factors in language classes as implemented at KUKTEM. Students in KUKTEM have to

attend two English language meetings per week, and one of the meetings is conducted at Multimedia Language Lab (MML). Students are exposed to the use of ICT tools both in the normal class settings as well as at the MML; however, the MML is better equipped with ICT tools compared to the normal class. Most language activities conducted in class or given as assignments to students involve the use of ICT tools. Most presentations require students to use PowerPoint; some students even go to the extent of exploiting the audiovisual tools such as Real and Media Player and Adobe PhotoShop in their presentations. Internet-based activities namely e-learning, online exercises, browsing the Web for materials, hyperlink and use of digital equipments frequently take place in class and are assigned to students, especially when students are required to do project works. All MMLs are also installed with different language software for teachers to utilize in class or assign to students as self-access activities and assessments. In short, students are exposed to profusion contact of ICT tools in language classes.

Sample and Method

The subjects of this study (who have been exposed to the utilization of ICT in language classes for 4 consecutive semesters) were 110 randomly selected second year students from various faculties. The students consisted of 80 male students and 30 female students. From 110 respondents, 50% of the respondents came into the limelight of ICT exposure since they entered KUKTEM; about 23% discovered ICT while they were at their respective Matriculation Centre whereas the rest was exposed much earlier.

Questionnaires were administered to these respondents rating and inquiring on their response on how much ICT has affected and influenced their motivation towards second language learning. Respondents were informed that each statement on motivational factor of ICT tools are directed towards language learning as practiced in KUKTEM. All ratings on motivation were made on a 5-point Likert-type scale, ranking from 1 as presenting respondents' strong agreement on the statement to 5 as expressing their strong disagreement. The questionnaire focuses on three effects of motivation: *self-confidence*, *creativity* and *active involvement*.

Findings and Discussions

The following are the findings tabulated according to the three effects of motivation focused in this study.

Greater Self-Confidence

To obtain the data on respondents' self confidence in relation to the use of ICT, 7 items were used in the questionnaire which involved self-confidence in communication, interaction, participation in language classroom and giving presentation in general. Below is the list of survey items on eliciting students' opinions on the use of ICT in improving one's self-confidence in language learning.

Survey Items on Self-Confidence

- V22 I enjoy using the ICT to communicate with my teachers
 - V26 I enjoy using the ICT in delivering a speech
 - V29 Using ICT in communicating helps me to overcome my weaknesses and powerlessness
 - V31 I am less afraid to speak with the help of ICT
 - V32 Usage of ICT helps me to develop my thoughts and ideas
 - V34 I like interacting with my friends through ICT
 - V38 I can better participate in class using ICT
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Figure 1 (refer to Appendix 1) illustrates the percentage of respondents on the statements related to their experience particularly their self-confidence in language learning with ICT. When the students were asked whether ICT had helped them to develop their thoughts and ideas, majority (65 %) of the respondents agreed to that statement. This is supported by a written report by Education Department of Institute for the Transfer of Technology to Education (1995) which indicates that technology “offers tools for thinking more deeply, pursuing curiosity, and exploring and expanding intelligence as students build "mental models" with which they can visualize connections between ideas on any topic”. Meanwhile, about 50% agreed to the statement that they enjoyed using ICT in delivering speech. In fact, they agreed that with the help of ICT made them less afraid to speak up. It gives us an idea that ICT does help students in making good and effective presentations. This is supported by a study conducted earlier (Hafizoah, Haslinda & Noor Raha, 2005) that the use of PowerPoint in presentation helps the students a lot especially when the slides are created with attractive “animation, audiovisual effects, multimedia graphic and attractive colours” (p.8). These slides are believed to be able to attract the attention of the audience rather than they paying attention on the speaker, hence give ample time for the speaker to build more self-confidence and deliver an effective presentation. In using ICT in communicating with teacher and interacting with friends, only 40% of total respondents enjoyed using it. According to Ybarra & Green (2003), computer can act as a tool to facilitate language learning in which it can “increase verbal exchanges”, for instance, the use of email through computer. Singhal (1997) explains that interaction using e-mail, in particular “can provide authentic communication”, hence, further allows the student to practice the language that she/he is learning. In terms of students’ participation in language classroom, only 40% of the respondents agreed that they could better participate in class using ICT. This could be due to the fact that the students were not so clear of the way that they can participate in language classroom with the use of ICT. Besides, this could also clarify the fact that students are probably so used to or much more familiar with traditional classroom environment which needs them to raise their hand in order to participate in class (without the use of ICT tools).

Improved Sense of Creativity

Ryan & Deci (2000) postulate that learners with intrinsic motivation demonstrate high-quality learning, higher order thinking, natural curiosity and creativity. These attributes can be further stimulated when tasks given are of optimal novelty and difficulty particularly when learners are provided with personal choice, control and interests in the learning process. As such, educators are encouraged to develop purposeful learning activities and adopt methods that are of such nature.

In a study conducted, appropriate exploitation of ICT tools in language classes can offer students excitement and stimulate pleasure when digital equipment are used and when animated functions of ICT tools and Internet are incorporated in the activities (Hafizoah, Haslinda & Noor Raha, 2005); hence, this could move students to express their creativity. For this study, respondents were given 5 statements focusing on creativity. All statements are directed towards the development or expression of creativity in language classes through the use of ICT. Below is the list of the statements asked.

Survey Items on Creativity:

V18 - Using ICT makes me feel appreciated with my works.

V21 - I love expressing my creativity when I use ICT.

V36 – I enjoy using the multimedia and digital functions of ICT to be more imaginative.

V40 – ICT helps me to demonstrate my artistic quality.

Generally, Figure 2 (refer to Appendix 2) illustrates that for all statements on creativity more than 50% of the respondents expressed their agreement that utilizing ICT tools in language classes does assist them to either express their creativity or develop their sense of creativity in language classes, and due to this, students felt that their work is appreciated more. Figure 2 (refer to Appendix 2) also shows that less than 10% of the respondents stated their disagreement that ICT tools can help increase their creativity. Students especially responded positively high for statement V32 when 69% agreed that ICT tools can help develop their thoughts and ideas creatively in language classes. This is in tandem with a study conducted by Allegra, Chifari & Ottaviano (2001). They found that integration of ICT "...allows learners to reveal their thoughts and feelings, and develop their imagination..." (p.49). When compared with the frequency of usage of the WWW, audiovisual tools, word processing such PowerPoint in the language classes, the frequency is higher especially with WWW and word-processing. In both studies, Hafizoah, Haslinda & Noor Raha (2005) and Allegra, Chifari & Ottaviano (2001) found that with the aid of the word-processor and access to the Internet, students are able to create pleasing and attractive presentation, share their ideas freely and in turn develop their motivation to learn. Most learners enjoy the learning experience when they are able to transform normal presentation into digital audiovisual presentation, use animation and manipulate vast information from the cyberspace to supplement their thoughts and ideas for project works.

Enhanced Active Involvement in Activities

KUKTEM promotes student-centered learning (SCL) as a core approach in order to enhance independent study among students. With this mission, students are expected to fully utilize the multimedia language lab in learning English language and to show their enthusiasm in the language learning classroom. As stated by Coz (1997), regular use of ICT across different curriculum subjects can have a beneficial motivational influence on students' learning. Using Multimedia Language Labs as frequent as 2 hours per week has definitely been a reason why students are keen to learn language in KUKTEM. Figure 3 (refer to Appendix 3) explains how students feel on their involvement in language learning classroom with the help of ICT. Having the privilege of using Multimedia Language Labs (which are fully-equipped with ICT resources), 45% students felt that they are better learners especially when the learning process involves ICT. Meanwhile, more than 70%

students felt they could freely share their ideas through ICT and they preferred using ICT in a discussion with their friends. This is supported by findings from BECTA (2004) where students spent more time drafting and re-drafting their work in English when using laptops, compared to those who did not have access to the technology. ICT also helps students in many ways where 88% of the students felt they could overcome their shyness when they used ICT. This is also supported by Norlida & Supyan (2002) where students who admitted that they did not enjoy learning English at the beginning of the program, changed their perception towards this and all of them reported that they enjoyed learning the language after given the chance to use ICT.

KUKTEM perceives positively on a student-centered approach in learning and with ICT more than 80% of the students felt they have become active participants in the class and ICT has helped them (94.5%) to learn actively with each other. As Jones (2003) claims that by using technology, the teacher becomes a guide, motivator, facilitator and coordinator of learning resources. This requires the academic teacher to create a “context of learning which encourages students actively to engage in subject matter.” The students will become the “doer” and to support independent learning, 59% of the students felt they could learn English more independent when they used ICT. Below is the list of survey statements on active involvement.

Survey Items on Active Involvement:

- V17 – I am a better English language learner when ICT is used.
 - V19 – I can freely share my ideas through ICT.
 - V24 – I prefer using ICT in a discussion with my friends.
 - V25 – ICT helps me overcome shyness.
 - V27 – Using ICT gives me more chances to participate in class.
 - V28 – I am committed to learn with the assistance of ICT.
 - V30 – ICT helps me to learn actively with each other.
 - V33 – I am keenly involved in learning English through ICT.
 - V37 – ICT helps me to become an active participant in the class.
 - V39 – I can learn English more independent when I use ICT.
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Conclusion

ICT can assist students in so many ways whereby students are encouraged to use internet to explore information and knowledge. Most students are excited because the information needed will be at their fingertips within a split second. This will definitely boost their motivation and students will be able to fully utilize their potential with the use of ICT. This is especially true when these students are able to give effective presentations with full of confidence (with the help of ICT) in front of the others. In addition, ICT will also support students' needs by providing accessibility to word application, and they are able to put forward their findings to the class. Besides that, ICT offers learners maximum personal control on their learning process especially for those who are ICT literate. The promising future of students improving their pronunciation can be clearly seen when they use dictionary software and they are able to remedy their articulation and accent. Furthermore, students will also be motivated as with the help of ICT, they spend lesser time to complete assignments. In KUKTEM, wireless networking makes ICT even more

flexible and adding to this proliferation of online usage such as e-learning, portal, personal website, emails, and intranet memo, students are able to create a wide range of output technologies. Hence, these students should be able to become the “knowledge architect” (BECTA, 2004) using opulent resources through technology in conveying their ideas and thoughts inside classroom. This will also produce a diversity of learning and teaching style and by collaborating ICT and other Soft Skills elements (team working, learning capability, critical thinking, problem solving), students are able to become life-long learners in the future.

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APPENDIX 1

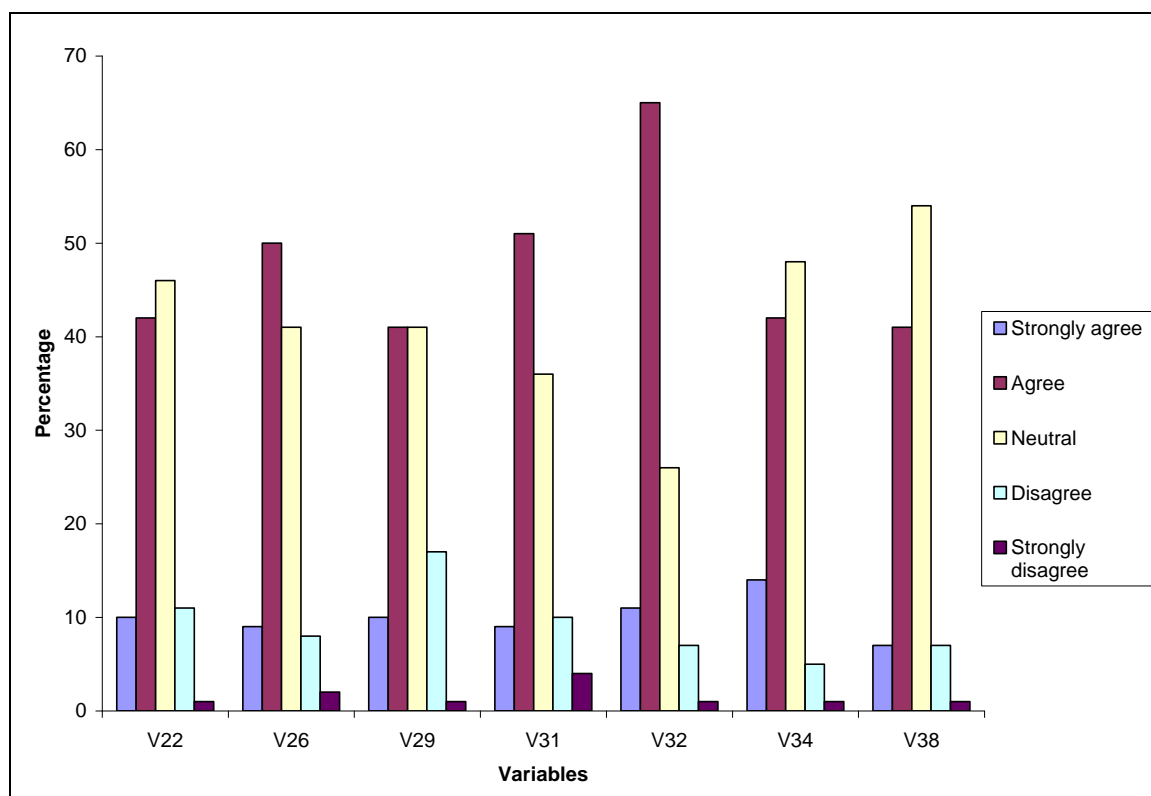


Figure 1: Enhancement of Self-confidence

Survey Items on Self-Confidence

- V22 I enjoy using the ICT to communicate with my teachers
 - V26 I enjoy using the ICT in delivering a speech
 - V29 Using ICT in communicating helps me to overcome my weaknesses and powerlessness
 - V31 I am less afraid to speak with the help of ICT
 - V32 Usage of ICT helps me to develop my thoughts and ideas
 - V34 I like interacting with my friends through ICT
 - V38 I can better participate in class using ICT
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APPENDIX 2

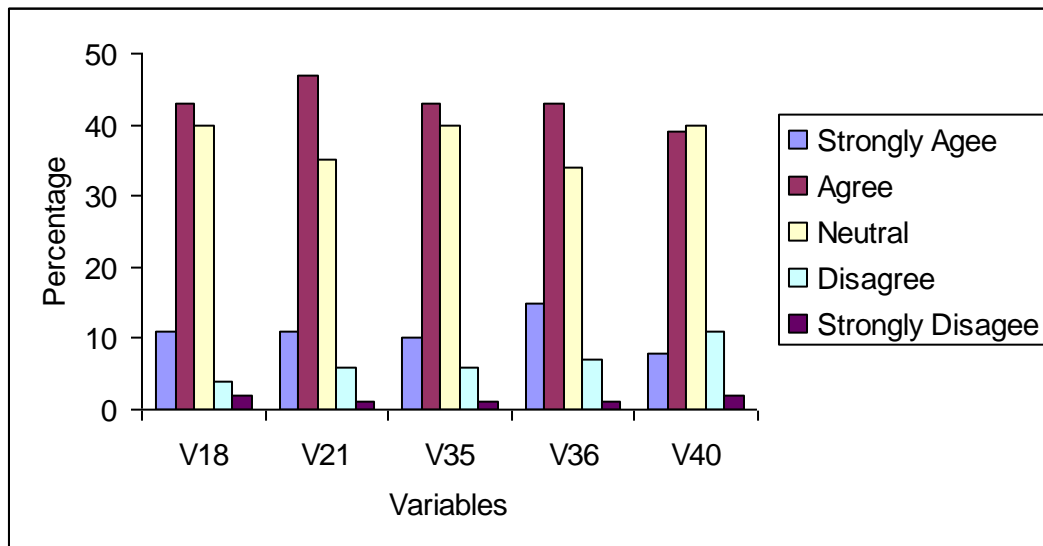


Figure 2: Improvement of Creativity

Survey Items on Creativity:

V18 - Using ICT makes me feel appreciated with my works.

V21 - I love expressing my creativity when I use ICT.

V36 – I enjoy using the multimedia and digital functions of ICT to be more imaginative.

V40 – ICT helps me to demonstrate my artistic quality.

APPENDIX 3

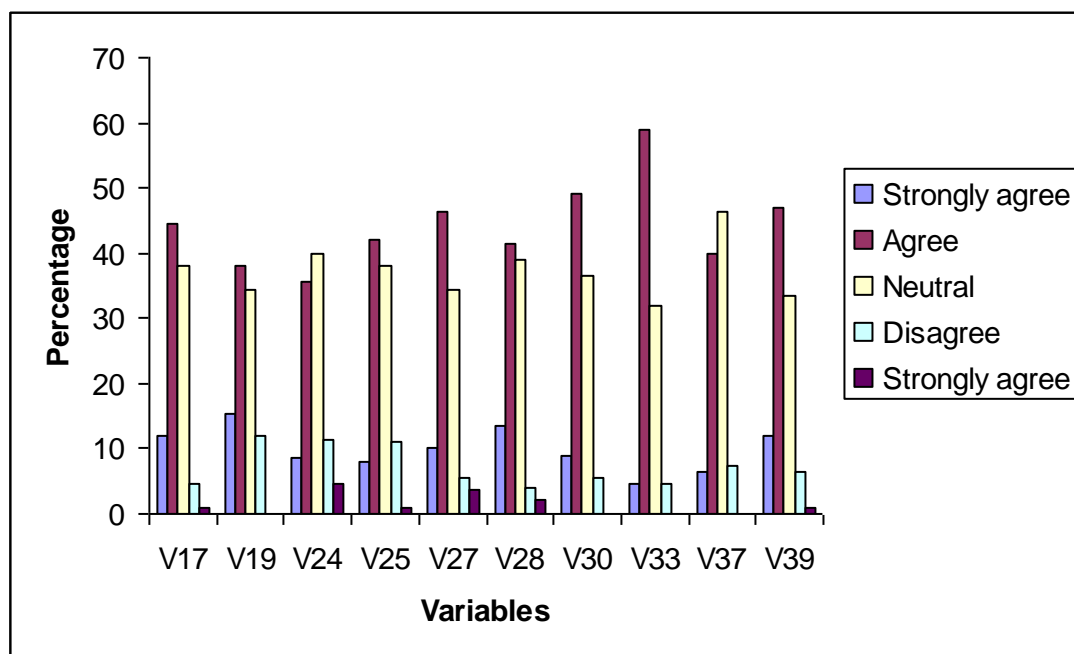


Figure 3 : Active Involvement

Survey Items on Active Involvement:

V17 – I am a better English language learner when ICT is used.

V19 – I can freely share my ideas through ICT.

V24 – I prefer using ICT in a discussion with my friends.

V25 – ICT helps me overcome shyness.

V27 – Using ICT gives me more chances to participate in class.

V28 – I am committed to learn with the assistance of ICT.

V30 – ICT helps me to learn actively with each other.

V33 – I am keenly involved in learning English through ICT.

V37 – ICT helps me to become an active participant in the class.

V39 – I can learn English more independent when I use ICT.
