Students' Perceptions on the use of Technology in Language Teaching

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Abstract: Research on the use of technology in educational settings has tended to focus on the impact of technology on the educational outcomes. The other area that that has long been ignored in this research field, when it should form an integral part of research in educational technology, is historical background and views of the students on the technology's role in achieving educational goals. The research theory that is relevant in this regard is cultural-historical activity theory (CHAT) to additional language learning in education that is drawn from the cultural-historical psychology theory. One-hundred and five participants completed a survey questionnaire. The findings reveal that 66% of the respondents come from families where there are no computers at home and 57% have no good knowledge of computer use even though 53% claim to have been introduced to the use of computers at their last schools. Despite this, the respondents show overwhelming support for the use of technology in higher education. The results are important in that they give hope on the acceptance and possible independent use of technology by students to improve their English proficiency once they have been introduced to technology in language learning.

Keywords: *historical background, students' perceptions, additional language learning, technology in education*

1. Introduction

The use of technology in developing countries' education systems, such as South Africa where even the distribution of school textbooks can be an issue that is sometimes taken to courts before it materialises, is not yet well explored. As a result, a few educational institutions that venture into the use of technology often receive attention. For instance, Elkins (2013) reports on a one tablet per child project at an ex model C school called Sunward Park High that is situated in Boksburg (Johannesburg). This project was however made possible by a donation from a local businessman rather than by the government. At tertiary level, IT-Online (2013) and PRWEB (2013) identify and commend CTI Education Group, which is a distance-learning private college, as the first higher education institution in South Africa to provide all its student population with tablet computers loaded with prescribed textbooks, at no extra expense. A resident tertiary institution that is reported to initiate technology among its first-year students in 2014 is the University of Johannesburg. The challenge though is that students will be expected to bring their own laptop, tablet or iPad device (Fripp, 2013). However, itnewsafrica.com (2013) notes that the SA High-tech Student 2013 research study conducted among 1 435 South African tertiary students revealed that the participants were unanimous that the social media, which they access through technology, enhances their academic lives and could even help them during exam time.

Makoe (2011, 177) attributes this slowness to adopt new technologies in education to issues of the imbalance in access to technology, unfamiliarity with the use of information technologies for educational purposes and a lack of willingness to learn about using new technologies. For this reason, caution needs to be exercised when venturing into this territory in an effort to ensure that the students embrace technology and draw maximum benefits from its use. Furthermore, Makoe (2011, 178) urges the importance of considering 'an implicit set of attitudes, beliefs and values, when introducing changes in pedagogy.' This limited use of technology in South African education is a course for concern because it occurs despite the immense educational advantages of the use of technology in education that have long been exploited in many developed countries such as the United States of America (USA), United Kingdom (UK) and Japan (Smith, Higgins, Wall and Miller, 2005; Cui and Wang, 2008; Latheef and Romeo, 2010). Educational benefits of technology use that are of interest here are those associated with the development of writing skills in English first additional language (L2). Nakatsukasa (2009) states that the 1991 Long's Interaction Hypothesis indicates that interactive features of technology, such as the use of blogs, have the potential in developing L2 proficiency. In addition, it has been found in the international arena that online language learning activities can reduce anxiety, provide authentic audience, allow

negotiation of meaning, encourage flexibility in learning, contribute to quality of learning, develop independent learning, enhance technological and pedagogical interaction and expose students to language learning information on grammar and vocabulary (Itakura and Nakajima, 2001; Kano, 2004; Yoshimura and Miyazoe-Wong, 2005; Smith et al., 2005; Tanner, Jones, Kennewell and Beauchamp, 2005; Dyck, 2008; Kennewell, Tanner, Jones and Beauchamp, 2008; Nakatsukasa, 2009; Sunday Times, 2013).

Yet, Koszalka & Wu (2004) caution that available research on the use of technology in pedagogical settings has previously tended to focus on the use of the technology and its impact on the educational outcomes. While the use and the impact of technology in education are important parts of research to assess, the other area that Koszalka & Wu (2004, 492) consider to have long been ignored in this research field when it should form an integral part of research in educational technology is key elements of the activity itself such as historical background, attitudes and motivations of the subjects and the technology's role in achieving educational goals. They argue that it is important for research "to examine the individual(s) involved in the activity and activity elements" because learning emerges from activity that takes place within social practices. Research that focuses on these issues could be critical in a developing country such as South Africa, especially when the targeted student population comes from historically disadvantaged communities and educational settings that might not have adequately exposed them to technology before they arrived in higher education institutions. This would particularly be important in a tertiary institution that is located in a previously black township that still attracts mainly the previously disadvantaged students coming from rural areas of KwaZulu-Natal in South Africa (SA). The situation could be further made worse by the fact that this is a university of technology which would mainly attract students with poor matriculation results that would have made them not to qualify for a traditional university admission. Mangosuthu University of Technology (MUT) that is situated in the south of the city of Durban at Umlazi Township fits this description and as such forms the context of this study.

Hence, the purpose of this article is to report on a study in progress that initially investigates first-year L2 University of technology students' perceptions and experiences with the use of technology in education in South Africa. The inquiry into the students' background and perceptions about technology is conducted prior to the implementation of technology in their English teaching classes. This approach is meant to address the gap in research whereby technology implementation in education tends to focus on the outcomes (Koszalka & Wu, 2004). In this regard, the question that the study set out to answer is: What are the students' experiences and perceptions on the use of technology in education?

2. Literature Review

The research theory that is relevant in the investigation of attitudes and experience with technology is cultural-historical activity theory (CHAT) to additional language learning in education that is drawn from the cultural-historical psychology theory that was developed by Vygotsky (1978). Vygotsky's (1978) social-cultural theory on learning forms a background to the use of technology in education. In this theory Vygotsky (1978, 90) argues that since social interaction is the main source of human development 'learning is a necessary and universal aspect of the process of developing'. Similarly, the CHAT attempts to make explicit linkages between an individual's development and the social-material conditions of his or her everyday practice in second language research (Thorne 2003, 2; Koszalka & Wu 2004, 493; Kuutti & Engestrom 2005, 44). Thorne argues that focus in this area is important because the use of technology tools is not neutral but it is influenced by social practices such as schooling and 'the cultures-of-use'. Along the same line, Koszalka & Wu (2004, 493) state that: This approach [CHAT] requires, at minimum, a shared understanding of the character and history of the subject [student], the object unto which the individual is attempting to reach [competency in L2], the characteristics of the surrounding community [background], and the tools [technology] available to the subject [my emphasis].

In a sense, the CHAT helps to shed some light on 'the character and history of the subject, the object unto which the individual is attempting to reach' (Koszalka & Wu, 2004, 492). In an effort to reduce and control background variables that might impact negatively on the outcomes it is recommended that research in educational technology should commence with the investigation of attitudes towards use of technology in the classroom, beliefs related to teaching practices and previous access to technology (Koszalka & Wu, 2004, 493). Koszalka & Wu assert that this approach is important because the CHAT paradigm argues that knowledge is constructed by individual learners, building on existing historical experiences' (493). This implies that a researcher venturing on the use of technology would do so better

prepared if they have an understanding of their students' background with technology. Boitshwarelo (2011, 4-5, citing Smith & Rabin 2005) further argues that it is critical to precede technological intervention into learning with an analysis exercise to gain the necessary front-end information that would enable you 'to make appropriate decisions towards the development of effective and efficient learning environments'.

This approach is critical because 'positive attitudes towards science and technology are important as *learning goals* in themselves' (Sjøberg & Schreiner, 2010, 4). Such information could be gathered through administering of questionnaires on students background and attitudes to technology in education at entry level of the course (Schreiner & Sjøberg, 2004; Storch, 2005). For instance, the Schreiner & Sjøberg (2004) study recommends a questionnaire as a suitable research instrument mostly consisting of closed Likert scale questions. The reasons provided in support of closed questions include the fact that they are cheap to collect, provide tidy data that are easy to compare and can be answered quickly and easily (Schreiner & Sjøberg, 2004, 35). As part of background information gathering it would be necessary to look into gender differences. This area of investigation is essential because students' experiences and perceptions of technology may be related to gender in accordance to their age, place and culture. For instance, the Schreiner & Sjøberg (2004) study that administered a questionnaire in 40 countries (including S.A) among 40, 000 students of 15 year olds found that even though 'young people in all countries had rather positive attitudes to science and technology in society' yet the girls seemed 'to be much more ambivalent than the boys' in developed countries.

The findings would then influence what kind and how technology is introduced and utilised in class. If for instance it is apparent from the initial findings that students generally lack background knowledge and experience on the use of technology it would be necessary to provide them with training and to introduce technology gradually and in a less threatening manner. This could be done by moving from the familiar technology such as the use of cell phones and moving to tablets long before they are introduced to computers. A study conducted by the SA Network Society in collaboration with Research ICT Africa found that in the South African context mobile phones are used by seven out of ten citizens to log on to the internet, to learn and to improve their work and business prospects (*City Press,* March). This may suggest that students could equally be encouraged to use mobile phones as a means of information gathering for their studies such as to improve the argument in an essay they are writing. Furthermore, mobile devises can be explored in education in what has been termed m-Learning or mobile learning. The m-Learning route is reported to have gained popularity in a number of developing countries in Africa such as Senegal, Kenya and Nigeria (Nicholas, 2013).

Elsewhere, Cui & Wang (2008, 69) assert that cell phones are probably the most popular and widely used mobile devices by the public all over the world, especially in China. They however raise concern that in China cell phones educational potential has not been adequately explored by teachers and instructional designers. They note that this is unlike in the United States (US) and United Kingdom (UK) where Mobile Learning (m-learning) has immensely developed. Similarly, in South Africa the number of mobile phone users especially among the youth has grown astronomically throughout the years. Sadly, they have also not been adequately utilised in education. Cui & Wang (2008, 74) lament the continued outdated use of textbooks and other learning materials that are not related to students' daily lives as this leads to students being less motivated to learn. While the argument made by Cui & Wang (2008) might be valid in countries with well developed Information and Communication Technology (ICT) infrastructure this might not be the case in S.A. schools where even the delivery of textbooks is a challenge. It is however encouraging to note that despite such challenges the idea of using technology in education is beginning to receive favour in some schools and tertiary institutions in S.A. and across the African continent. For instance, according to the Openequalfree (2013) the Department of Science and Technology in collaboration with the ICT Initiative for Rural Education is reported to have initiated a pilot programme in which it provided tablets to rural schools in the Eastern Cape district with great success. The intervention contributed to the pass rate increasing from 41% to 71% within one year of the project implementation. This indicates that m-Learning has the potential to motivate students to be more dedicated to learning. The promising results of the pilot project have encouraged the S.A. government to consider extending the tablet programme to other provinces. Such promising results are also reported by the Humanipo (2013) in Ethiopia where the One Laptop per Child (OLPC) project revealed within six months of its inception that illiterate rural children were able to teach themselves English using tablets that they managed to bypass their security without any training whatsoever.

According to the University of KwaZulu-Natal (2013) their medical school has also embarked on a similar pilot project in an effort to improve teaching and learning. Cell phones could therefore be a useful and easily available tool, then tablets, to initially explore as a means to get students interested in the use of technology, in the site of the reported study, in an effort to develop their competency in L2 through interaction with technology. A term used to refer to the use of technology in education is interactive teaching (Kennewell, 2004) or interactivity (Kennewell, Tanner, Jones & Beauchamp, 2008). In this regard Latheef & Romeo (2010) define interactivity as a term that describes the exchange of information and communication that takes place in the process of teaching and learning, among the teacher and learners using technological tools such as cell phones, Blackboard, Interactive Whiteboards, Web-based processing tools and many other mediums in order to achieve educational goals.

According to Pasfield-Neofitou (2011, 92) L2 uses of computer-mediated communication (CMC) is prevalently viewed as a useful tool for language practise outside the classroom. This could prove to be equally relevant particularly in a context where students have limited social use of L2 outside the classroom due to the dominance of one common language in their university and surrounding communities, such as in the context of this study. Success in this regard would however be determined by the quality and effectiveness of the developed language activities for interaction outside the classroom. Vygotsky (1978) work on a theoretical basis for collaborative projects with its emphasis on the role of social interaction in learning is useful in this regard. This theory draws from a communicative approach to L2 learning and therefore indicates that language activities should encourage communication among students which should take the form of group or pair work. Such a form of learning has the potential to motivate students to engage with technology even beyond the prescribed time by their lecturers. Thus, the above literature review indicates that CHAT is the main theory that informs the use of technology in education. This theory allows a researcher not only to focus on the outcome of the use of technology to facilitate teaching and learning but also to investigate other related factors. Such factors could include the historical background of the participants in relation to the use of technology.

3. Methodology

The aim of the overall study is to investigate the effectiveness of using technology in the teaching and learning of Communication in English at Mangosuthu University of Technology (MUT). At this phase of the study, however, the study sought to establish the attitude of the participants regarding the integration of technology in their learning. To this effect, data were collected from first year students registered for English Communication 1 in Office Management and Technology (OFFMAT) and in Analytical Chemistry (ANCHEM) diploma. Questionnaires were designed to gather data about the participants' background and attitudes to technology in education. The questionnaires were administered to the students during their Communication 1 period and were collected immediately after completion. The responses in each questionnaire were captured onto and submitted through a Google form which automatically analysed the data, giving a percentage per response, and creating graphs and charts per question/statement.

4. Results and Discussion

Section A of the questionnaire consisted of nine questions that attempted to establish the biographical background of the participants and their familiarity with the kind of technology the researchers would use. This section also included questions on their experience of the use of such technology in their learning. In total there were 105 participants who responded to the questionnaire. The composition of the participants comprised of 35 (33%) males and 70 (67%) females. Their age group was made up of 52% between the age of 16 and 19, 39% between age 20 and 24 and 9% above age 24. It should however be noted that the composition of the participants, in terms of gender and age, did not seem to have a remarkable impact on students' perceptions and experiences with technology in education.

To establish their familiarity with technology, the participants were asked whether or not they owned any computer at home (or where they lived), if they had any computers at their high school, and if they could use a computer. Sixty six percent (69 of 105) of the participants indicated that they and their family did not own a computer, and 40% (36 of 105) solely depended on their municipal/university library in order to use a computer. It is worth noting, however, that 41.7% of the participants who or whose family owned a computer indicated that they could not use a computer well. Further, many of the participants (53%, 56 of 105) indicated to have had computers in their previous school even though 34% of them (19 of 56) could not use a computer well. Overall, 57% (59 of 105) of the participants indicated that they
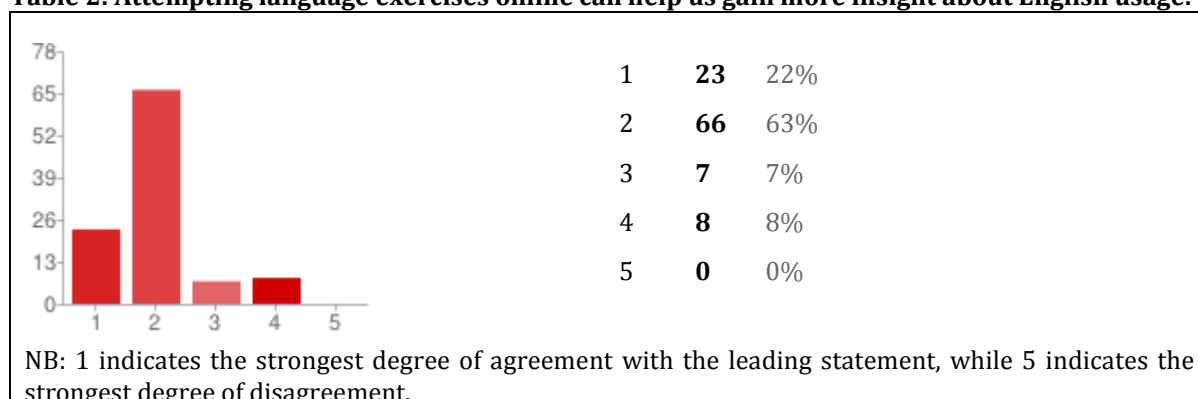
could not use a computer well. It may be concluded, therefore, that most of our participants did not have experience with a computer, and that those who had some experience were not confident they could use a computer well. This may be summarised in the following diagram:

Table 1: Computer Knowledge

Question/Statement	% Yes	% No
I /my family own a computer	34	66
At the last school I went to we had access to computers.	53	47
I know how to use a computer very well.	43	57

Interestingly, 75% of the participants claimed to own a cell phone that could give them access to the internet and social media networks. This suggests that cell phones could be one of technological learning tools to be exploited to facilitate teaching and learning as the majority of students might be familiar with their operations as opposed to the use of computers. Moreover, it suggests that the use of tablet computers, if available, might not be a serious challenge that would require intense training before use in education. Further, the study sought to establish the participants' attitude towards the use of technology in their learning. In order to find this out, the participants were asked to rate in a scale in which 1 indicated the strongest degree of agreement with the leading statement, and 5 the strongest degree of disagreement. Many participants (43%) were unsure if they learned or could learn (in the case of those who had no experience with computers whatsoever) better when information is presented on a computer. Nonetheless, 58% of the participants agreed that lecturers should use technology throughout their teaching, while 63% of them disagreed that submitting their assignments and taking tests and examinations and turning them in to their lecturers through a computer could be favourable. Many participants (59%) rated technology in education positively and believe that technology could enhance their confidence in L2 development. In a nutshell, it could be deduced that the participants showed a positive attitude toward the integration of technology in their learning and teaching. Below is one of the statements that the participants were asked to rate:

Table 2: Attempting language exercises online can help us gain more insight about English usage.

1	**23**	22%
2	**66**	63%
3	**7**	7%
4	**8**	8%
5	**0**	0%

NB: 1 indicates the strongest degree of agreement with the leading statement, while 5 indicates the strongest degree of disagreement.

5. Conclusion

The fact that our participants did not have much experience with a computer and that those who did were not confident they could use a computer well poses a challenge to the researchers regarding the intended integration of technology in teaching and learning. Moreover, many participants were unsure if they learned or could learn better when information is presented on a computer. This is understandable given the fact that many of the participants had never been taught through the use of technology before. It emerges though that the use of cell phones could be a better option to introduce the participants to technology. Caution would at the same time need to be exercised by not assuming or expecting the students to possess advanced smart-phones considering that the majority of them come from a disadvantaged background. This would necessitate a prior survey on the type of mobile phones owned by students. Alternatively, activities assigned to the students would need to encourage group-work as this would enable them to share their limited resources.

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