

## Impact Of Technology on the Academic Performance of Form One Pupils in Masvingo Urban, Zimbabwe

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### Abstract

*this study examined the impact of technology on form one pupils' academic performance in two secondary schools in Masvingo urban. The study is informed by Bandura's social cognitive learning theory and Vygotsky's socio-cultural theory. The study used a phenomenological design with interviews with eight students (four from each school) and two teachers as data-collection instruments. The design helped to bring to the surface deep issues and to make the voices of the participants heard. To make sense of the collected data, the researchers applied the grounded theory of data analysis to identify themes and categories. This study established that the use of technology by children at both their homes and schools positively and negatively contributed to learning and academic performance. Technology allowed the dissemination of knowledge to be dispersed instantly and it allows for quicker and more effective communication. The study established that, if the technology is used in moderation and under adult guidance, it enhances language development, creativity, and problem solving skills while overuse and addiction to certain types of technologies can be disastrous. This study recommends that parents and teachers monitor children's use of technology in order to reap benefits from various technological gadgets. The government and other interested parties should ensure that schools are equipped with relevant technologies. The study also recommends that teachers be in-serviced on ways of using technology in teaching and learning*

**Keywords:** *technology, academic performance, phenomenology, cognitive development*

### Background of the study

In recent years, technology has rapidly changed and shaped the way individuals and societies deal with issues the world over. Negative and positive arguments have been proffered for and against the use of various technological gadgets. Patel (2013), as well as Chitanana (2014), concur that technology allows many people to generate and disseminate information, thus playing an active role in the process of interaction between professionals, learners, policymakers and peers. This consequently results in increased peer-to-peer interactions by digital means in order to replicate real-life 21st century communication skills. Selwyn (2012) further argues that there is no development in education without ICT. To that end, integration of ICT in teaching and learning should develop children's competencies in thinking critically, decision-making, handling of dynamic situations, working in teams and communicating effectively which are all important in making pupils perform as expected (Anderson and Weert, 2002). However, for this to be fully realized, schools should have the facilities. In the USA, for example, as early as 1996 computers were made accessible to every student and classrooms were wired to one another and to the outside world (European Commission, 1998). This thus created an enabling environment for technology to be introduced and used effectively in the school system. Some secondary schools in Zimbabwe still do not own computers and related gadgets, hence the need for this study to explore the impact of technology on the academic performance of form one learners in Masvingo urban, Zimbabwe.

The perception of mobile phones has changed as it is now a multi-purpose device used for texting, chatting, games and the internet (Kuznekoff and Titsworth, 2013; Lenhart et al., 2010). Xue (2013) is of the opinion that today's young people have an 'app' (applications) mindset which motivates them to seek direct, quick, easy solutions, the kind of answers an app would provide. The use of mobile phones, therefore, can assist pupils to learn various subjects within the confines of the classroom or beyond the classroom walls (Amann-Hechenberger, Buchegger, and Schawarz, 2010). Therefore if appropriately used, technological gadgets can

assist secondary school pupils to grasp various concepts in the subjects they learn. Kazembe and Sithole (2010) attributed the low pass rate in General Paper to teachers' attitudes towards developing scientific skills necessary in understanding Environmental Science. The low passes were taken to be a clear testimony that teachers were not taking advantage of technology when delivering lessons.

Despite efforts by the Government, School Development Associations (S.D.As) and School Development Committees (S.D.Cs) to ensure that schools in Zimbabwe were equipped with computers and other technological gadgets, performance was low in some subjects where technology could assist a great deal (Bukaliya and Mubika, 2012). Chitanana (2014) posits that steps have been taken in Zimbabwe since 1997 to introduce technology as a way of improving the quality of education. This began with the World Links Programme (WLP), the introduction of the Better Schools Programme in Zimbabwe (BSPZ) and the purchase of computers by S.D.As (Gondo, 2015; World Links, 1998). To promote the use of technology in schools in Zimbabwe, the then President of the Republic of Zimbabwe went on to donate computers to ten schools in each of the ten provinces of Zimbabwe (New Ziana, 27 May 2014; Chitanana, 2014). Apart from that, the Zimbabwe Government adopted a national ICT policy in 2005 that was informed by Vision 2020; the National Science and Technology Policy adopted in 2002 and the Nziramasanga Education Commission Report (Shafika, 2007; Chitanana, 2014). Furthermore, Dzvimbo, Barasa, and Kariuki (2006) and Chitanana (2014) highlight that the African Virtual University (AVU) in 2006 established a teacher education project involving 10 African countries which Zimbabwe is part of and it focuses on the integration of ICTs in the teaching of Mathematics and Science. Therefore, the performance of pupils in Science and Mathematics is targeted to go up.

Apart from the computers, almost every adult in Zimbabwe now has a mobile phone or iPod that could be used effectively for children's learning. Mapimhidze (Newsday, 27 January 2012) indicates, though without statistics, that almost every person in Zimbabwe in both rural and urban areas owns a mobile phone. Some children also possess these gadgets as the country continues to promote the use of technology on a day to day basis.

On the other hand, Parker-Pope (2010), Bargh and McKenna (2004) highlight that constant use of the internet detracts time and is akin to addiction. A longitudinal study by Kraut et al. (1998) carried out in Pittsburgh, Pennsylvania, revealed that greater use of the internet caused a small but significant decline in social involvement and an increase in loneliness and depression (Subrahmanyam et al., 2000). While such arguments have been given against the constant use of the internet, it also suffices to point out that other technological gadgets can also have the same damning effects. For example, the iPod preoccupies the owner such that he or she will no longer be obligated to interact with other factors that make everyday life (Sahakov, 2014). As iPods provide an easy escape from having to interact with strangers, pupils who use them might end up failing to work with others during group activities. Children who spend too much time watching movies on the television, playing video games, chatting on WhatsApp or some such gadgets, can also develop this sense of loneliness. A study on fourth to twelfth-grade students in the United States revealed that those who played video games or played on the computer for more than an hour a day believed they had less control over their lives compared with their peers (Subrahmanyam et al., 2000). In addition, evidence from some studies suggests that playing violent computer games may lead to increased aggressiveness and hostility and desensitise children to violence (Musarurwa, 2014). Loneliness and depression may lead to anxiety. In a school, anxiety can serve an adaptive function, but when anxiety is severe, it can have significant negative effects on learners' ability to perform at an optimal level (Huberty, 2009; Caplan, 2007).

The controversy regarding the importance of technology in Zimbabwe sucked in the former Minister of Primary and Secondary Education, Dr. Lazarus Dokora who proposed that schools should permit learners to possess such gadgets as cell phones, laptops, and other mobile devices since people are living in a world where technology is changing every day (Ndlovu in Bulawayo 24NEWS 7 February 2015; Murwira in Chronicle, 20 February 2015). This raised a lot of debate from various quarters with some Zimbabwe Senators saying mobile

phones and tablets had the potential to promote pornography; a culture that is not Zimbabwean (Langa in Newsday, 21 February 2015). There was also an outcry against Dr. Dokora's call to allow learners to possess mobile phones with schools and parents saying cell phones promote limited learning, behavioural problems, raise the potential for cheating and the risk of theft (Ndlovu, The Herald, 7 February 2015; Chidavaenzi in NewsDay, 16 March 2015). Consequently, Ilechukwu (2013) posits that while technology possesses unending possible detriments such as passing irrelevant materials for learners' needs, it also has positive impacts on today's youths. As such, if modern technology is used with discretion, it enhances social activity, but if used anyhow, it can create a less interactive generation which depends entirely on technology for contentment.

There appeared to be a gap as far as researches that were carried out on use of technology in Zimbabwe are concerned. Most of the researches focussed on higher institutions of learning such as colleges and universities. In Zimbabwe, it appeared as if the technology was specifically used by those who were in higher institutions of learning. Given the above, not much research was done on the impact of technology on primary and secondary school learners in Zimbabwe hence this study hopes to close the gap in research.

### **The theoretical framework**

The research is grounded in Albert Bandura's social cognitive theory and Vygotsky's socio-cultural theory of cognitive development.

Bandura proposes that the pupils in schools can be a product of what they see and consequently model/copy/imitate especially if it is done by the significant others. Technological gadgets such as televisions and the internet are rich sources of behaviours that children can copy be they good or bad. Bandura also talks of vicarious reinforcement which occurs when a person observes another person being rewarded or punished for a particular behaviour (Lahey, 2009). Observing behaviours being rewarded positively or negatively on the television, iPods and mobile phones were considered to have serious consequences in the child's performance in school.

One assumption of Bandura's theory concerns triadic reciprocity. According to Snowman and Biehler (2009), triadic reciprocal determinism is the view that behaviour is a product of the interactions among personal characteristics, behaviour, and environmental factors. Classroom learning is therefore shaped by factors within the academic environment, especially the reinforcements experienced by oneself and by others (Denler, Wolters and Benzon, 2014). At the same time, learning is affected by students' own thoughts and self-beliefs and their interpretation of the classroom context. Children's academic environment includes what happens in the home and at school. The technology that children used in the home and at school constituted part of the learners' environment in this study. This was evaluated against other factors that were seen interacting with the technology in a reciprocal fashion hence influencing the pupils' learning. Vygotsky's socio-cultural theory tries to explain cognitive development in terms of Zone of proximal development, scaffolding, guidance, play, language, support, and structure provided by culture.

Like Bandura, Vygotsky argued that technology could also act as models for the children and therefore influences their behaviours and the way they learn in school. Technology can, therefore, assist pupils in the secondary schools to manage particular tasks they cannot manage on their own. Given the above, technology, therefore, provides scaffolding, play, language development and development in the ZPD to learners. Kagan and Britto (2005), as well as Hewes (2006), agree that Vygotsky believed that play stimulates physical, social, emotional and cognitive development in early years. Technology is fun to use and has play materials and programmes in abundance. On the other hand, Snowman and Biehler (2009) say Vygotsky referred to the difference between what a child can do on his or her own versus what can be accomplished with some assistance as the zone of proximal development (ZPD). In this research, this implied the interaction between a learner and technology. Vygotsky also made reference to scaffolding which could be hints, clues, questions,

prompts, breaking a problem into steps and anything else that helps a learner to become successful. In this study, scaffolding referred to the assistance pupils got during the process of learning by interacting with various technological gadgets.

### **The purpose of this study**

The purpose of this study was to explore the effects of use of technology by form one learners in Masvingo urban secondary schools. The study was guided by the following research questions:

- To what extent is the academic performance of form ones affected by the use of technology?

### **Research design**

The study adopted a phenomenological design in order to explore and present the impact of technology at two secondary schools in Masvingo urban in Zimbabwe. The phenomenological approach is used to highlight the specifics and to identify the impact of technology at two secondary schools in Masvingo urban in Zimbabwe through how they are perceived by eight form ones and two teachers. One of the advantages of the phenomenological design is that it allows the researchers to gain an understanding of social phenomena from participants' perspectives in their natural settings (McMillan & Schumacher, 2010).

### **Sample and Sampling**

The sample comprised eight form ones (4 from each of two purposively selected secondary schools) and two teachers. In this study, purposive sampling was found to be more realistic than other sampling methods in terms of time, effort and cost needed in finding informants as propounded by (Bernard, 2012). The two secondary schools were chosen because of their proximity to the researchers.

### **Instrumentation**

Data were collected through face to face interviews. Creswell (2013) argues that, capturing what people say in their own words is the most important contribution of qualitative research to understanding human behaviour and perception. The advantages of using interviews in this study were to allow the researchers to adapt the questions as necessary, clarifying doubt and ensure that the responses were properly understood by repeating or rephrasing the questions (Patton, 2012). Another advantage of using face-to-face interviews in this study lies in the quality of the data obtained. This implies that the participants were in a position to seek further clarification on some of the responses through probing.

### **Data Collection Procedures**

To allow for the collection of as much relevant information as possible, the interviews to 8 selected form ones and two teachers were not tightly structured. Therefore, relevant issues which were not included in the interview guide but arose during the process of conducting the interviews were explored and noted in impromptu supplementary questions. This was in line with the flexible nature of qualitative research (Yin, 2012).

### **Trustworthiness**

The research instruments were validated by research experts and a pilot study was conducted hence trustworthiness of data was ascertained.

### **Data Analysis**

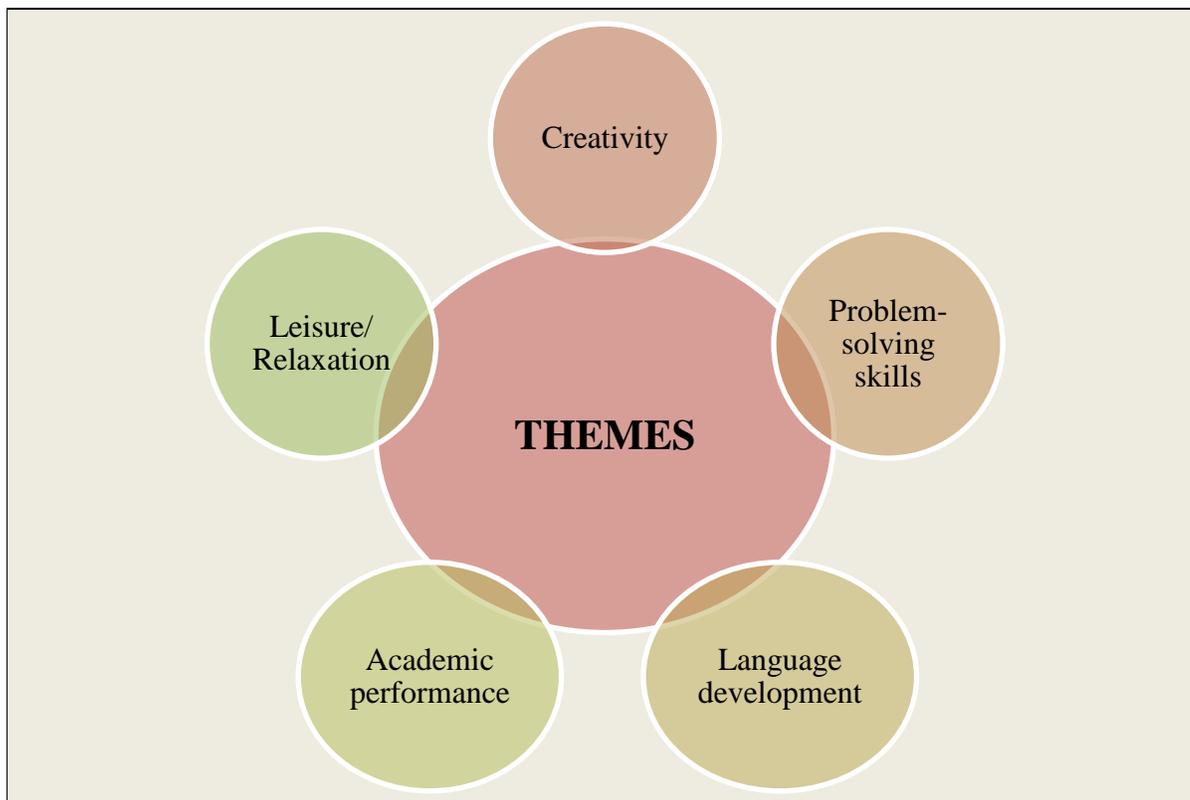
The main method that was used to analyse data from interviews was thematic content analysis through the use of grounded theory. This involved identifying, coding and categorising patterns in data (Creswell, 2013). The grounded theory is a systemic process of examining, selecting, categorising, comparing, synthesising and interpreting data to unpack the major research questions of the study (Yin, 2012).

### Ethical Considerations

Permission to conduct the study was secured from the Ministry of Primary and Secondary education in Zimbabwe. Teachers who participated in interviews completed consent forms and form one learner completed assent forms to show their willingness to participate in the research. The participants were informed that their involvement in the study was voluntary and that they were free to withdraw at any stage of the interviews if they were not comfortable. Participants were assured of anonymity in participating in the study. Confidentiality and privacy were upheld.

### Findings and Discussion

The data collected through interviews yielded the five themes represented diagrammatically in figure 1.1 below.



**Figure 1.1: Themes derived from the findings of the research**

#### Theme 1: Problem-solving

The study established that technology can enhance children’s problem-solving skills which are important in assisting them to get relevant solutions to the problems they meet in various subjects that they learn at secondary schools. Arguments proffered by the two teachers who participated in this study were that the internet is now the in-thing as it is a rich source of knowledge. In this regard, the teachers agreed that various technologies now constitute relevant cultural tools. In that regard, Horak (2010) states that technologies

significantly affect human's abilities to control and adapt to their natural environments. The following verbal quotes were echoed by participants:

*The internet has revolutionised education as children can use it to get answers to any question provided they are conversant with how this is done. With the relevant software installed in computers, iPods and even mobile phones, children can get the solutions they want. These gadgets can as well show pupils how to solve certain scientific and mathematical problems, hence sharpening their problem-solving skills (T1).*

*...On the internet you can google any information you want. The internet widens learners' information base when compared to textbooks (T2).*

The same benefits were echoed by form one learners who echoed the following sentiments:

*There are very educative programmes on television especially in the morning where Mathematics and Science concepts and concepts from other subjects are solved in very interesting ways. These programmes assist me in my studies (FO1).*

*I have always taken time to watch competitions that involve schools battling with each other in various subjects on ZTV. I have often made reference to what I gain in the programmes when I am in class (FO7).*

Almost all the students interviewed confirmed the above sentiments are arguing that video games helped them think very fast as one is expected to complete an activity before being timed out. Findings established that technology help child to discover new knowledge and ideas. Technology, therefore, plays a scaffolding role which is necessary for tackling new experiences that are related to what the child will already know. Scaffolding according to Vygotsky takes place within the zone of proximal development (ZPD) which is the difference between what a child can do on his or her own versus what can be accomplished with some assistance (Snowman and Beihler, 2009). This, therefore, brings about the argument that scaffolding aids in developing problem solving skills.

Teacher, T1, added his voice by pointing out that:

*On a daily basis, there are programmes on television that look at various concepts in various subjects. In addition, video games and other programmes accessed via the internet assist children in solving the problems they meet in school. I encourage my own children to play video games when they are at home. The use of technology itself assists in solving complex problems as pupils will be required in most instances to manipulate the gadgets as they learn. The hands on approach motivate pupils and results in them solving real life problems. Pupils always get excited when they have computer lessons.*

The above sentiments were also confirmed by Marshall (2012) who published results on studies which revealed that learners show greater achievement on standardised tests after using computers for mathematics problem solving. Chitanana (2014) posits that using ICT enables learners to access digital information which in turn helps students investigate issues, solve problems and make informed decisions.

Although most respondents felt that technology assist learners to be good problem solvers, T1, felt that what children simply did was a reproduction of what was presented by the various gadgets. They felt technology, on the contrary, makes learners lazy as they always expected various technologies, such as calculators and the internet, to provide them with answers to questions without their own input. Gamboa and Garcia-Suaza (2011) concluded that the use of technology could disrupt learners, reduce their effort levels and restrict their creativity. Thus, pupils simply extract answers from the internet without giving any thought to what they will put on paper. According to Sahakov (2014) technology has made cheating simpler than ever before with minimal probability

of being caught. For example, a learner can take a picture of their work and send it via instant messaging to friends who simply copy the work. However, the responses that were given by the majority of participants were enough testimony that technology is quite relevant to the learning of secondary school pupils.

## **Theme 2: Language development**

In this study, the teachers and pupils were in agreement that technology plays a significant role in the development of language especially English that is used extensively wherever technology is in use. It was also evident that other languages such as Shona, Venda, and Ndebele can also be accessed through technology. The following verbal quotes illustrated the above:

*I benefit immensely from the programmes that I watch on television as I, later on, use the language that I will have heard to answer questions and to discuss during lessons. Some people believe that cartoons are just for fun, but they are loaded with relevant vocabulary for the young (FO4).*

*The compositions that I write are inspired by the vocabulary I learn when I am exposed to technologies like the TV, radios, the internet, and other technologies. I end up writing good sentences because I will copy what I would have heard. This also happens because I will have seen certain scenes in movies that I will have watched (FO6).*

*Technological gadgets such as the radio have proved very effective in developing children's auditory skills as well as language in general. This is because pupils are encouraged to listen attentively to what will have been said and then say what they will have heard. In other words, technology enhances communication (T1).*

*When a computer is used, pupils benefit a lot in terms of spelling as the computer corrects wrong spelling on its own. Pupils will thus learn correct spellings and later use them when they write. Furthermore, if pupils have access to computers and type their work, it becomes very legible and easy to read and mark (T2).*

The respondents' sentiments point out that technology is incredibly motivational since it caters for various learning styles, that is, it allows pupils to learn in their preferred ways. The respondents agreed that when messages were beamed electronically say on projectors, they would generally be very legible and thus benefit learners in a great way. Chitanana (2014) posit that the use of presentational software aids less confident students in putting forward their thoughts and ideas. In this regard, technology builds on children's self-esteem and self-efficacy. Technology is also said to benefit remedial reading students and language development. A study by Geary and Mydland (2008) established that remedial reading students showed significant knowledge gains and improved attitudes towards reading as a result of using computer reading games. Additionally, digital picture books help children develop language skills.

On the contrary, one form one, FO5 expressed his reservations as regards the positive effects of technology on language development. He explained that the shorthand that is used when SMSs and WhatsApp messages are written by most people affects communication negatively in a great way. This plays havoc on spelling and construction of good sentences. FO5's views are echoed by Danielle, Fanny and Khalid (2013) who highlight that frequent use of instant messaging by learners usually leads to using of bad grammar, poor punctuation and improper abbreviations which affect academic writing.

It should be noted that generally, the majority of the participants argued that technology teaches children language that is well above their level especially if they read, watch and listen to programmes that are way above their level. However, some words will be inappropriately used by the learners as a result. Ahinda et al (2014) point out that some pupils when playing with others, use abusive language that they will have heard on television programmes. Bandura believes that behaviour can be learned without necessarily being engaged in

that kind of behaviour and that behaviour does not need to receive direct reinforcement for it to be sustained (Mwamwenda, 2010). Children hence learn hate speech via technology and later use it when people least expect it. Contrary, however, to these sentiments, a study that was carried out in America revealed that the Court Television's Choices and Consequences programme reduced children's verbal aggression which includes teasing, swearing at and arguing with others (Marshall, 2012). Furthermore, viewing Sesame Street was positively associated with subsequent performance in reading, mathematics, vocabulary and school readiness (Wright, Huston and Kotler, 2001).

Positive and negative influences of technology on the development of language were presented by the respondents during the interviews. When the responses were taken into consideration and weighted together with related literature, conclusions reached were that technology influences language development positively in a very big way. This was reached after considering how technology influences both oral and written language as learning involves the use of both forms of language. However, the negative effects of technology on language development need to be minimised in order for secondary school pupils to benefit fully as they learn.

### **Theme 3: Creativity**

Pupils who were interviewed attributed some of the good compositions that they wrote to the influence of technology as they stated that stories they heard on the radio and those they saw on other technological gadgets, created impressions that lasted. Teachers also highlighted that pupils who actively participated in role plays, drama, music and dance in most cases imitated what they would have seen or heard. This, therefore, happened as a result of technology. Child FO2 pointed out that:

*Although I have never met 'Amai Azuka' the Nigerian actor, I was impressed by the way she acts in movies I watch on television and so have taken to acting like her.*

The children who took part in the research unanimously agreed that their schools have a number of pupils who were budding 'Amai Azukas,' 'Kapfupis,' 'Vhara Zipis' and some such actors. Cherry (2014) thus argues that findings concur Bandura's theory which argued that people could learn new information and behaviours by watching other people which are called observational learning. For observational learning to succeed, the processes of attention, retention, motor reproduction and motivation should be satisfied. Engagement in such activities as drama and role plays can be equated to play which Vygotsky advocates for. According to Kagan and Britto (2005), the play is a child-centered activity which promotes learning. Hewes (2006) adds that play stimulates physical, social, emotional and cognitive development.

### **Theme 4: Academic performance**

The teachers who participated in the research concurred that technology had come in handy as regards to identification of the appropriate content and concepts to be taught at various levels. The sequencing of the content and concepts could as well be guided by technology hence contributing to the academic performance of the learners. The technology was viewed by teachers as an important ingredient from the preparation stages of lesson delivery. Teacher T2 said the technology could also be used as media, especially in science subjects. Sahakov (2014) found out that some studies showed that technology could be used as teaching media which increased learners' concentration levels and consequently improvements in class attendance and achievement. Chitanana (2014) established in other parts of Zimbabwe that ICTs enhance teaching and learning by bringing world experiences into the classrooms and familiarising learners with sources of materials and resources. The other teacher, T1 felt that technology could come in handy in the teaching and learning of all subjects.

The above assertions are in line with findings in the United States of America by Harrison et al. (2004) who established some significant positive associations between ICT use and school achievement in English, Maths, Science, Modern Foreign Languages and Design Technology. Higgins, Xiao, and Katsipataki (2012) also

established an association between high ICT use and higher pupil attainment in primary schools. In addition, FO1 said technology reduces the burden on the teacher and thus motivates him or her to work even harder which contributes to pupils' learning. On the other hand, when technology is used as media, it captures the attention of the pupils leading to heightened enthusiasm, independent problem solving and a stronger will to learn.

The study also established that one way of capturing pupils' attention and of making them learn is to prepare PowerPoint presentations on the concepts to be taught. These really appeal to the eye and thus capture pupils' attention throughout the lesson. PowerPoint presentations can be created in such a way that they have slides that are attractive in terms of designs, transitions, animations, speed, and sound. If these are combined together, the presentations become really appealing to the learner especially young learners in form one. This will be translated to learning as the pupils' attention will be captured and the images will have a lifelong impression on the learner. Santrock (2014) states that according to the social cognitive theory, attentional processes are critical because learners must attend to relevant environmental events in order to learn.

Computers facilitated collaborative learning as advocated for by Vygotsky in his socio-cultural theory of cognitive development. This was seen when children went for computer lessons where they were supposed to use a computer in groups. The teachers attributed this to the fact that all children enjoyed using computers hence wanted to have a feel of the gadget each time they got into the computer lab. Balanskat (2007) argues that ICT and other related gadgets enhance group processes and collaborative learning. Working together and sharing ideas results in most cases in pupils at any school level doing well in school.

### **Theme 5: Leisure/ Relaxation**

The majority of the respondents concurred that it is fun to engage in games which technology offers as a way of relaxing after a day's hard work. These could be video games that will be played on computers, mobile phones or some other gadgets. At the same time, children will be learning through play which is seen as quite important in developing cognition according to Vygotsky's socio-cultural theory of cognitive development (Kagan and Britto, 2005) and learning through modelling and imitation according to Bandura's social cognitive theory. FO1 posited that:

*Whenever children have access to the school computers during their own spare time, they play the different games that the machines offer. The children are always excited when they are offered the opportunity to play on the computers. We should, therefore, be given time to use computers during free periods so that they clear up their minds in readiness for the next lesson.*

Although children played video games as a pastime, cognitive researchers suggest that playing video games enhances children's ability to read, visualise images and solve problems (Magwa, 2013; Subrahmanyam et al., 2000). In this regard, learning will be taking place as children play.

As the majority of the respondents in the interviews and focus group discussions had a television set at home, they said they watched movies and games when they were at home as part of their leisure activities. The majority of children pointed out that after school, they watched a bit of TV before they wrote homework or went to bed while a few said they watched movies till late. Anderson et al. (2001) found out that watching television programmes may enhance school readiness and academic performance. In a study by Nganda (2007) in Lang'ata Division in Kenya, it was established that the watching of TV, especially by pre-scholars, can be beneficial to them provided the content was appropriate. On the other hand, Ahinda et al. (2014) point out that in a research that was carried out in Tiriki East Division of Kenya, although the TV was used in the promotion of education and entertainment, children with full exposure to TV performed poorly in class and failed to speak languages fluently. What has to be considered by the parents and/or teachers, who will be guiding the children, is the amount of television and the type of programming children should be exposed to (Zevenbergen, 2007).

This means that the parents', siblings', parents' and guardians' attitudes towards the use of technology have to change.

While using computers during pupils' own study times was seen as a noble idea, the majority of the form ones felt that the computers in the school were not sufficient to cater for the school's entire population. Mobile phones and video games could as well be used by the pupils in the absence of computers, but it was a school rule that no pupil was allowed to bring these to school at both the schools studied. It can be concluded that technology offers necessary leisure activities which when used sparingly, will contribute towards successful learning in the secondary schools.

## Conclusion

The data collected confirms that technology can be an effective tool in the teaching and learning process provided appropriate resources, appropriate use and the correct support and collaboration are realised. It is significant, for the purposes of this study, to point out that, even though some technological gadgets are used in some schools in Masvingo urban, there are some factors which are slowing down the speed at which technology is taken up as an effective means to secondary school pupils' learning. The findings based on the five themes that were identified revealed that technology posts both challenges and successes in the learning of form one pupils and the challenges need to be attended to.

## Recommendations derived from this study

On the basis of the findings made in this study, the following recommendations were made:

- Parents should be sensitised of the need to guide their children with regards to what type of technology and programmes they should be exposed to. They also should be made aware of the need to ensure that children use technology in moderation.
- The government should step up efforts to help equip schools with the relevant resources to enable schools to have adequate and relevant technology.
- The government should ensure that the policy on use of ICT in schools is strictly observed so as to compel schools to see that technology is made use of right from ECD.
- Teachers should continually be in-serviced on the use of technology as the majority of school teachers lack important technological skills.

## REFERENCES

- i. Ahinda, A.A., Murundu, Z.O., Okwara, M.O., Odongo, B.C. and Okutoyi, J. (2014) *Effects of Television on Academic Performance and Languages Acquisition of Pre-School Children.* *International Journal of Education and Research*, 2(11): 493-502.
- ii. Al-bataineh, A., Anderson, S., Toledo, C. and Wellinski, S., 2008. 'A Study of Technology Integration in the Classroom.' *International Journal of Instructional Media*, 35: 381-387.
- iii. Amann-Hechenberger, B., Buchegger, B. and Schwarz, S. (2010) *Using the Mobile Phone in School: Handling Opportunities and Risks Appropriately.* Vienna: Handywissen.at/Austrian Institute for Applied Telecommunications (ÖIAT)
- iv. Anderson D.R., Huston A.C., Schmitt K.L., Linebarger D.L., Wright J.C. (2001) 'Early Childhood Television Viewing and Adolescent Behaviour: The Recontact Study.' *Monographs of the Society for Research in Child Development*, 66(1): vii-147.
- v. Anderson, J., Weert, V.T. (2002). *Information and Communication Technology in Education: A Curriculum for Schools and Programme of Teacher Development.* Paris: UNESCO.
- vi. Balanskat, A. (2007) *Study of the Impact of Technology in Primary Schools: Synthesis Report.* European Commission [steps.eun.org](http://steps.eun.org) Public Services Contract n° EACEA/2007/4013.

- vii. Bandura, A. (2008) 'Social Cognitive Theory.' In Donsbach, W. (Ed.) *International Encyclopedia of Communication*, 10: 4654-4659. Oxford: Blackwell.
- viii. Bargh, J.A. and McKenna, K.Y.A. (2004) 'The Internet and Social Life.' *Annual Reviews of Psychology*, 55: 573-590.
- ix. Bergh, Z.C. and Theron, A.L. (2009) *Psychology in the Work Context*. 4<sup>th</sup> Ed. Cape Town: Oxford University Press Southern Africa.
- x. Bernard, H.R. (2012) *Research Methods in Anthropology: Qualitative and Quantitative Methods*. California: Alta Mira Press.
- xi. Bukaliya, R. and Mubika, A.K. (2012) 'Factors Militating Against the Introduction of Computer Education in Secondary Schools.' *Journal Of Educational And Instructional Studies In The World*. 2(3): 56-68
- xii. Caplan, G. (2007) *BTEC National Sport: Book 1*. Oxford: Heinemann.
- xiii. Cherry, K. (2014) 'Social Learning Theory', [psychology.about.com/bio/Kendra-Cherry1726\\_8.htm](http://psychology.about.com/bio/Kendra-Cherry1726_8.htm), [Accessed 18<sup>th</sup> December 2014].
- xiv. Chidavaenzi P. (2015) 'Cellphones in Schools: Storm Continues to Gather', *NewsDay*, 16 March, <https://www.newsday.co.zw/>, [Accessed 17<sup>th</sup> April 2015].
- xv. Chitanana, L. 'Information, Communication Technologies and Education.' In Zvobgo, R.J.(Ed.) (2014) *Contemporary Issues and Education*. Harare: College Press.
- xvi. Creswell, J.W. (2013) *Research Design: Qualitative, Quantitative and Mixed Methods Approaches*. Thousand Oaks, CA: Sage.
- xvii. Danielle, Fanny and Khalid (2013) 'Is Technology Helping or Harming Teenagers?', <http://www.technologyandteenagers.blogspot.com>, [Accessed 13<sup>th</sup> December 2014].
- xviii. Denler, H., Wolters, C. and Benzon, M. (2014.) 'Social Cognitive Theory', [http:// www.education.com/reference/article/bandura-albert-1925-/](http://www.education.com/reference/article/bandura-albert-1925-/), [Accessed 20-04-15].
- xix. Dzvimbo, K.P., Barasa, F.S. and Kariuki, C.W. (2006) *The AVU Teacher Education Initiative: An African Response to Challenges of Teacher Development and ICT Opportunities*. Libreville: Association for the Development of Education in Africa Biennale on Education in Africa.
- xx. European Commission (1998) *Review of Research and Development in Technologies for Education and Training: 1994-1998 – Supporting the Lifelong Learning Society through the Development of Telematics-based Tools for Learners, Educators, Trainers and Trainees*. Brussels: European Commission Director General XIII.
- xxi. Gamboa, L.F. and Garcia-Suaza, A.F. (2011) 'Access to Computer and Academic Achievement. Where is it Best: At home or at School?', *Discussion Paper No. 47 – June 2011*, Center for Studies on Inequality and Development.
- xxii. Geary, M. and Mydland, G. (2008) 'A Force More Powerful: Blended Learning for the Digital Age.' In C. Bonk, M. Lee and Reynolds, T. (Eds.) *Proceedings of E-Learn: World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education 2008*. Chesapeake, VA: Association for the Advancement of Computing in Education.
- xxiii. Gondo, B. (2015) 'World Links Bridging the Digital Divide', *Techzim*, [http://www. Techzim. co.zw/](http://www.Techzim.co.zw/), [Accessed 18<sup>th</sup> December 2014].
- xxiv. Government of Zimbabwe (2014) 'Zimbabwe's New ICT Policy in Full', <https://cmchimakure.wordpress.com/2015/03/12/zims-new-ict-policy-in-full/>, [Accessed 13<sup>th</sup> November 2014].
- xxv. Hewes, J. (2006) *Let the Children Play: Nature's Answer to Early Learning*. Montreal: Early Childhood Learning Knowledge Centre.
- xxvi. Higgins, S., Xiao, Z. and Katsipataki, M. (2012) *The Impact of Digital Technology on Learning: A Summary for the Education Endowment Foundation*. Durham: Education Endowment Foundation.
- xxvii. Horak, R. (2010) *Webster's New World Telecom Dictionary*. [books.google.com](http://books.google.com).
- xxviii. Huberty, T. J. (2009) 'Performance and Test Anxiety' in Paige, L. and Canter, A. (Eds.) *Helping Children at Home and at School III*. Bethesda, MD: National Association of School Psychologists.

- xxix. Ilechukwu, L.C. (2013) 'The Assessment of Utilization of e-Learning Opportunities for Effective Teaching and Learning of Religion in Nigerian Tertiary Institutions.' *European Journal of Educational Studies*. 5(3): 343-359
- xxx. Kagan, S. and Britto, P. (2005) *Going Global with Indicators of Child Development: The United Nations Children's Fund (UNICEF) Final Report*. New York: UNICEF.
- xxxi. Kazembe, T., Sithole, M. (2010) 'Effectiveness of Teachers at Preparing Grade 7 Candidates for Environmental Science Examinations.' *Eurasian Journal of Physics and Chemistry Education*. 2(2): 64-81.
- xxxii. Kraut, R., Patterson, M., Lundmark, V., Kiesler, S., Mukopadhyay, T., and Scherlis, W. (1998) *Internet Paradox a Social Technology that Reduces Social Involvement and Psychological Well-Being?* *American Psychological Association*, 53(9): 1017-1031.
- xxxiii. Kuznekoff, J.H. and Titsworth, S. (2013) 'The Impact of Mobile Phone Usage on Student Learning.' *Communication Education*. (62)3: 233-252
- xxxiv. Lahey, B.B. (2009) *Psychology: An Introduction*. 10<sup>th</sup> Ed. New York: McGraw-Hill Higher Education.
- xxxv. Langa, V. (2015) 'Cellphones Promote Pornography Among School Children – Senators', *NewsDay*, 21 February, <https://www.newsday.co.zw/>, [Accessed 25<sup>th</sup> February 2015].
- xxxvi. Lenhart, A., Ling, R., Campbell, S. and Purcell, K. (2010) 'Teens and Mobile Phones: Text Messaging Explodes as Teens Embrace it as the Centerpiece of their Communication Strategies with Friends', <http://pewinternet.org/Reports/2010/Teens-and-Mobile-Phones.aspx>, [Accessed 18<sup>th</sup> November 2014].
- xxxvii. Magwa, S. (2013) 'The Impact of Modern Technology on the Educational Attainment of Adolescents.' *International Journal of Education and Research*, 1(9): 1-8.
- xxxviii. Mapimhidze. R. (2012) 'Mobile Phones Destroy Family Ties,' *NewsDay*, 27 January, [rmapimhidze@newsday.co.zw](mailto:rmapimhidze@newsday.co.zw), [Accessed 1<sup>st</sup> February 2015].
- xxxix. Marshall, J. (2012). 'Learning with Technology: Evidence that Technology Can, and Does, Support Learning', <http://www.dcmp.org/caai/NADHI76.pdf>, [Accessed 25<sup>th</sup> November 2014].
- xl. Mbengo, P. (2014) 'E-learning Adoption by Lecturers in Selected Zimbabwe State Universities: An Application of Technology Acceptance Model.' *Journal of Business Administration and Education*. 6 (1): 15-33
- xli. McMillan, J.H. and Schumacher, S. (2010) *Research in Education: Evidence-based Enquiry*. 7<sup>th</sup> Ed. New Jersey: Pearson Education.
- xlii. Murwira, Z. (2015) 'Dokora Defends Phones in Schools,' *Chronicle*, 20 February, [www.chronicle.co.zw/dokora-defends-phones-in-schools/](http://www.chronicle.co.zw/dokora-defends-phones-in-schools/), [Accessed 23<sup>rd</sup> February 2015].
- xliii. Mwamwenda, T.S. (2010) *Educational Psychology: An African Perspective*. 4<sup>th</sup> Ed. Sandton: Heinemann Publishers.
- xliv. Ndlovu, T. (2015) 'Zimbabwe: Allow Cellphones in Schools, Says Dokora', *The Herald*, 7 February, [www.allafrica.com/stories/201502070257.html](http://www.allafrica.com/stories/201502070257.html), [Accessed 10<sup>th</sup> February 2015].
- xlv. Ndlovu, T. 'Nothing Wrong with School children Using Mobile Phones in School,' says Dokora', *Bulawayo 24NEWS*, 7 February, <http://bulawayo24.com/index-id-news-sc-education-byo-62277.html#sthash.YpxW9MVr.dpuf>, [Accessed 10<sup>th</sup> February 2015].
- xlvi. New Ziana (2014) 'Potraz in Schools Computerisation Project' 27 May, <http://www.bh24.co.zw/>, [Accessed 15<sup>th</sup> October 2014].
- xlvii. Papalia, D.E., Olds, W.S. and Feldman, R. (2009) *Human Development*. New York: McGraw-Hill.
- xlviii. Parker-Pope, T. (2010) 'An Ugly Toll of Technology: Impatience and Forgetfulness'. *The New York Times*, 6 June, [www.nytimes.com/2010/06/07/technology/07brainside.html](http://www.nytimes.com/2010/06/07/technology/07brainside.html), [Accessed 30<sup>th</sup> October 2014].
- xlix. Patel, B. D. (2013) 'An Assessment of Learning Resources for Teaching of Computer Education in Commerce.' *International Journal on Research in Humanities and Social Sciences*. 1(5): 38-40
- l. Patton, M.Q. (2012) *Qualitative Evaluation and Research Methods*. 7<sup>th</sup> Ed. Thousand Oaks, CA: Sage Publications, Inc.

- li. Sahakov, R. (2014) 2 Pros and 2 Cons to Education Technology. Edudemic.com, <http://www.edudemic.com/education-technology-pros-cons/>. [Accessed 13<sup>th</sup> March 2015].
- lii. Santrock, J.W. (2014). *Psychology: Essentials*. 2<sup>nd</sup> Ed. Boston: Houghton Mifflin.
- liii. Selwyn, N. (2002) *Telling Tales on Technology: Qualitative Studies of Technology and Education*. Hampshire: Ashgate Publishing.
- liv. Shafika, I. (2007) 'ICT in Education in Zimbabwe - Survey of ICT and Education in Africa: Zimbabwe Country Report,' [www.infodev.org](http://www.infodev.org), [Accessed 18<sup>th</sup> November 2014].
- lv. Snowman, J. and Beihler, R. (2009) *Psychology Applied to the Classroom*. Boston: Houghton Mifflin.
- lvi. Subrahmanyam, K., Kraut, R.E., Greenfield, P.M. and Gross, E.F. (2000) 'The Impact of Home Computer Use on Children's Activities and Development: The Future of Children.' *Children and Computer Technology*, 10(2):123-144.
- lvii. Tuckman, B.W. and Monetti, D.M. (2011). *Educational Psychology*. Belmont: Wadsworth.
- lviii. World Links (1998) *Zimbabwe - World Links For Development Programme Feasibility Mission Aide – Memoire*. Harare: World Aide Memoire
- lix. Wright, J.C., Huston, A.C., and Kotler, J. (2001). 'The Early Window Project: Sesame Street Prepares Children for School.' In S.M. Fisch and R.T. Truglio (Eds.), "G" is for Growing: Thirty Years of Research on Children and Sesame Street. Hillsdale, NJ: Erlbaum.
- lx. Xue, K. (2013) 'Digital Natives in the Wild: Is there an App for That?: The Lost Generation. The Greatest Generation. Generation X. And Now ... the App Generation.' *Harvard Magazine*. Harvard: Harvard Graduate School.
- lxi. Yin, R.K. (2012). *Case study research: design and methods*. (7th Ed.) New Delhi: SAGE Publication.