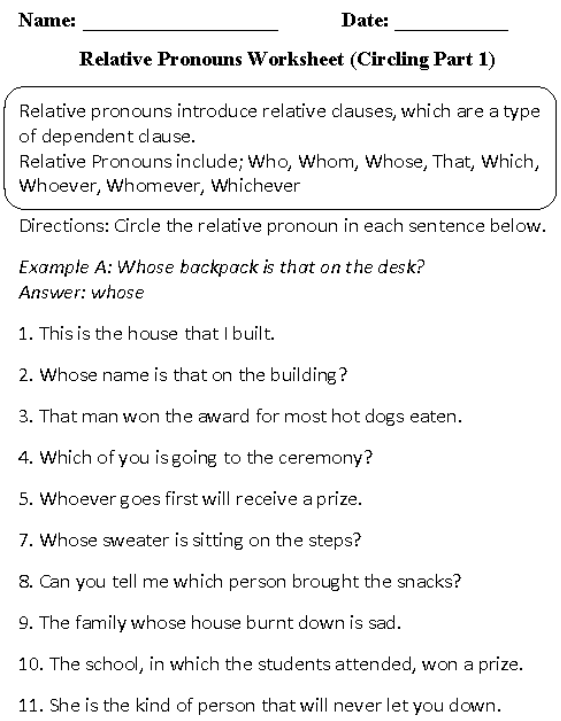
Below are samples of the worksheets the learners used to answer questions on the types of pronouns they learned. Answers were written and submitted in their workbooks.

Sample of Pronoun Worksheets



Name: _____ Date: _____

Relative Pronouns Worksheet (Circling Part 1)

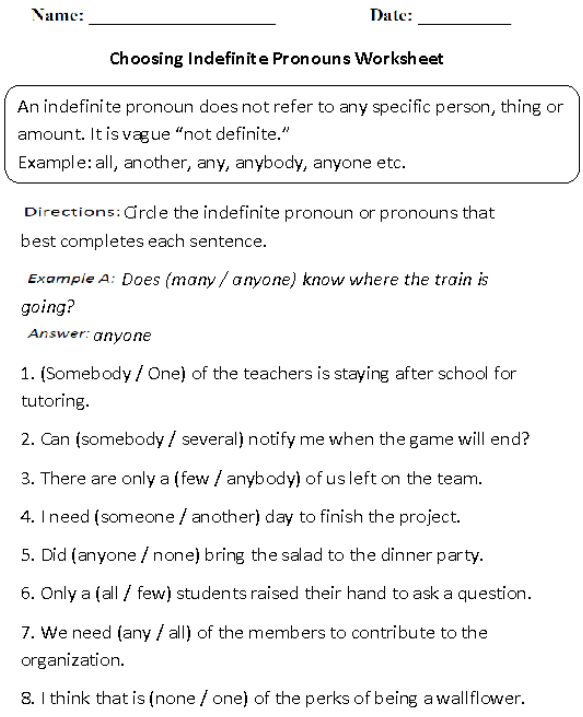
Relative pronouns introduce relative clauses, which are a type of dependent clause.
Relative Pronouns include; Who, Whom, Whose, That, Which, Whoever, Whomever, Whichever

Directions: Circle the relative pronoun in each sentence below.

Example A: Whose backpack is that on the desk?
Answer: whose

1. This is the house that I built.
2. Whose name is that on the building?
3. That man won the award for most hot dogs eaten.
4. Which of you is going to the ceremony?
5. Whoever goes first will receive a prize.
7. Whose sweater is sitting on the steps?
8. Can you tell me which person brought the snacks?
9. The family whose house burnt down is sad.
10. The school, in which the students attended, won a prize.
11. She is the kind of person that will never let you down.

Figure 6: Relative Pronouns



Name: _____ Date: _____

Choosing Indefinite Pronouns Worksheet

An indefinite pronoun does not refer to any specific person, thing or amount. It is vague "not definite."
Example: all, another, any, anybody, anyone etc.

Directions: Circle the indefinite pronoun or pronouns that best completes each sentence.

Example A: Does (many / anyone) know where the train is going?
Answer: anyone

1. (Somebody / One) of the teachers is staying after school for tutoring.
2. Can (somebody / several) notify me when the game will end?
3. There are only a (few / anybody) of us left on the team.
4. I need (someone / another) day to finish the project.
5. Did (anyone / none) bring the salad to the dinner party.
6. Only a (all / few) students raised their hand to ask a question.
7. We need (any / all) of the members to contribute to the organization.
8. I think that is (none / one) of the perks of being a wallflower.

Figure 7: Infinite Pronouns

As has been described above, T engaged the learners throughout the lesson, in their pursuit to discover knowledge on their own. Learners searched through the website online to get the answers. At the end of the lesson, he gave them exercises as shown in the extracts above. As can be seen from the extracts above, each of the pronoun types has its own explanation and questions for the learners to answer. Furthermore, T regularly gave cues to learners so that they could search for the right information on google. For example, for the interrogative pronoun, T asked learners to search for a kid's interrogation and then learners associated the picture with the meaning of the word "interrogative". At the end, they concluded that "interrogative" meant finding out. The next lesson was about comprehension.

Lesson 2: Online Comprehension Test

In this online comprehension test exercise, T asked learners to go on google and type online comprehension test which appeared on a window with a number of grades to choose from. He asked them to choose Grade five (5) and read carefully the comprehension and later answered

the eight (8) questions on the given link. T did not seem to follow the traditional way of comprehension teaching where he or learners read the passage aloud to the class and regularly stopping in some place to explain difficult words. Most of the learners seemed competent in using iPads, as observed from their smooth scrolling down of the comprehension passage, selecting answers after reading the passage.

Further instructions to the learners were given from time to time during the lesson regarding comprehension questions. At this stage, learners were able to move around freely with their individual iPad to consult other learners where they seemed jammed. T explained that the first two were multiple-choice questions including four, five, six and eight, while in three and seven, learners needed to type in answers to questions. After answering the questions, the learners clicked on the submit button to submit their exercise. The following pictures show the comprehension passage and the exercise that learners were given online. The picture below shows the comprehension titled 'It's All Clear Now' by Jean Lawler.

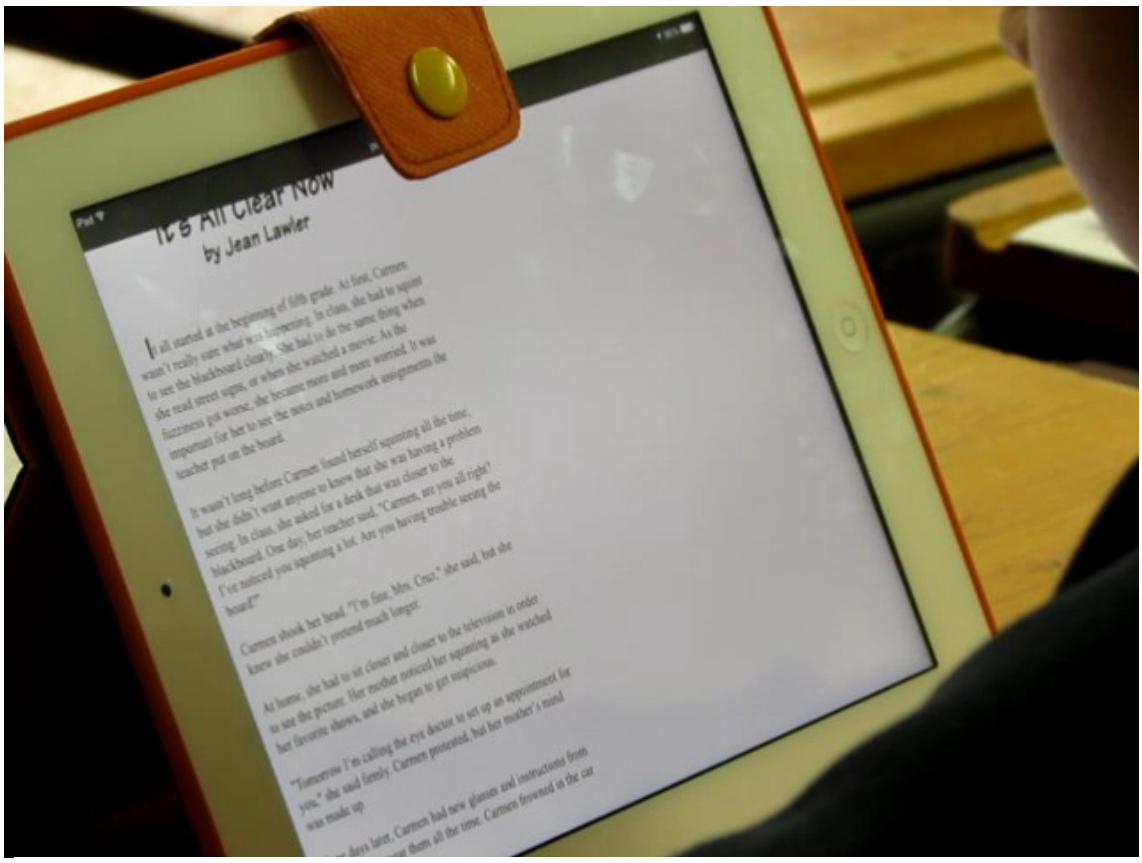


Figure 8: Online Comprehension

After reading the passage, T told the learners to click on the button on their iPad that signalled to the learners that they should proceed to the next page to answer the questions that

followed. It appeared that learners could use the internet dictionary to check for meanings of difficult words. The following figure (4) shows one of the learners answering the comprehension exercise.

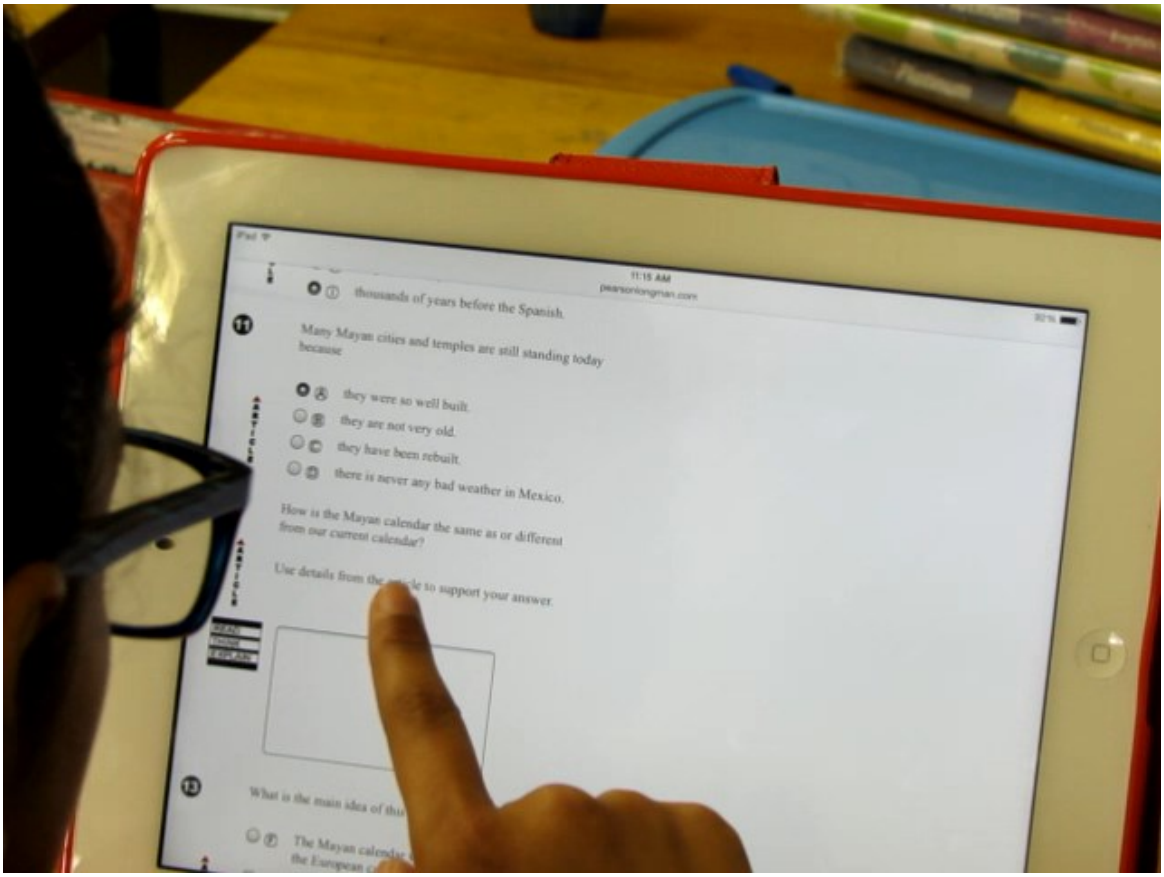


Figure 9: Online Comprehension Test

The iPad allowed learners to use their fingers in order to scroll up and down of the touch screen as answers were selected. The dialogue box in the picture involved a written answer, just as T had explained earlier on.

Lesson 3: Creative Writing

The following lesson is about creative writing. T introduced a lesson about blurbs. Blurbs are short descriptions of a product (e.g. a film) on promotion to entice customers to buy it. The following is a description of T's lesson on blurbs.

In this offline lesson, T began by revising the previous lesson in which learners were taught how to write an introduction and conclusion which learners swopped with others to complete. During the swopping, learners worked together, discussing and explaining to each other what they intended writing in order for enable their counterparts to write the conclusion on their

behalf. He explained the similarities between the previous lesson and the new lesson. Introducing a lesson, T explained what a blurb was and its function as described below.

T prepared a lesson on blurbs in advance and recorded himself using the "Explain Everything" app. The initial idea was to allow the learners to listen to the lesson using headphones, but not all learners came with earphones as he had instructed them previously. T then projected the recorded video lesson about blurbs through the interactive whiteboard (IWB). He told the learners that the example he gave them about a blurb was taken from a book called 'Glory Gate'. T explained that a blurb was usually a short depiction of what a film or a book was about. He further said that the purpose of a blurb was written for purposes of promotion. T explained that a blurb must leave people speculating of what could have happened next when they read it. This suspense, he added, should be able to either motivate people to watch the movie or buy the book. T further explained that the whole idea of a blurb was to give the plot of the story in brief to create a desire in people to read.

The blurb from 'Glory Gate' by Sally Odgers was about the rules that came with white shirts. T explained that the author was trying to say that, not that the new rules were hard to understand,

> Gavven just didn't see why the White shirts wanted to change every part of his life. Terrified of disobeying the White shirts, Gavven was even more afraid of losing one of the most precious things he still had - the freedom to think for himself.

After T had explained the blurb, he then asked learners to write their blurbs on their individual iPads and to read their blurbs to the class for discussion. The following are examples of blurbs written by learners. First, an example by T and blurbs written by learners are given below. They were captured by means of video recording in order to illustrate how iPads were used in the English Home Language lessons.

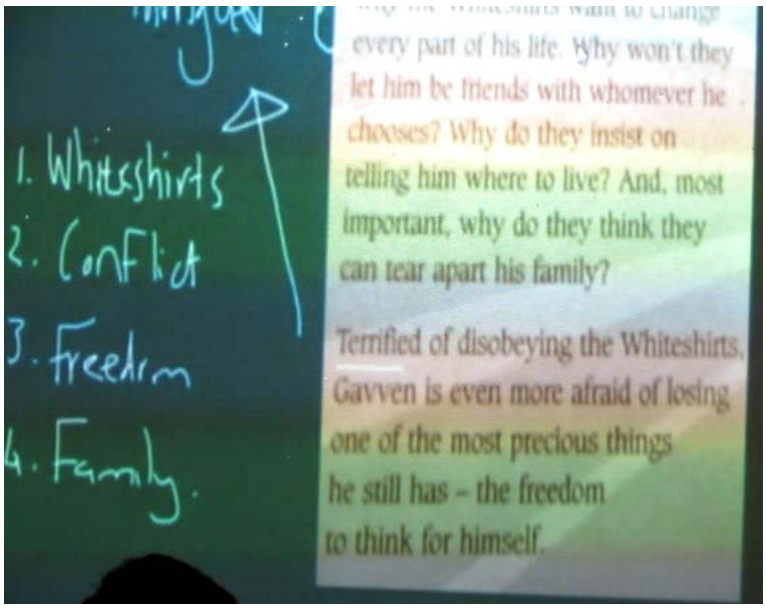


Figure 10: Teacher Lesson Presentation-Blurbs

In T's example above, he gave a brief summary of the blurb's plot, creating a short story line consisting of a conflict about Gavven's freedom and how it affected his family. Below are some blurbs written by learners.

Examples of Blurbs captured on iPads

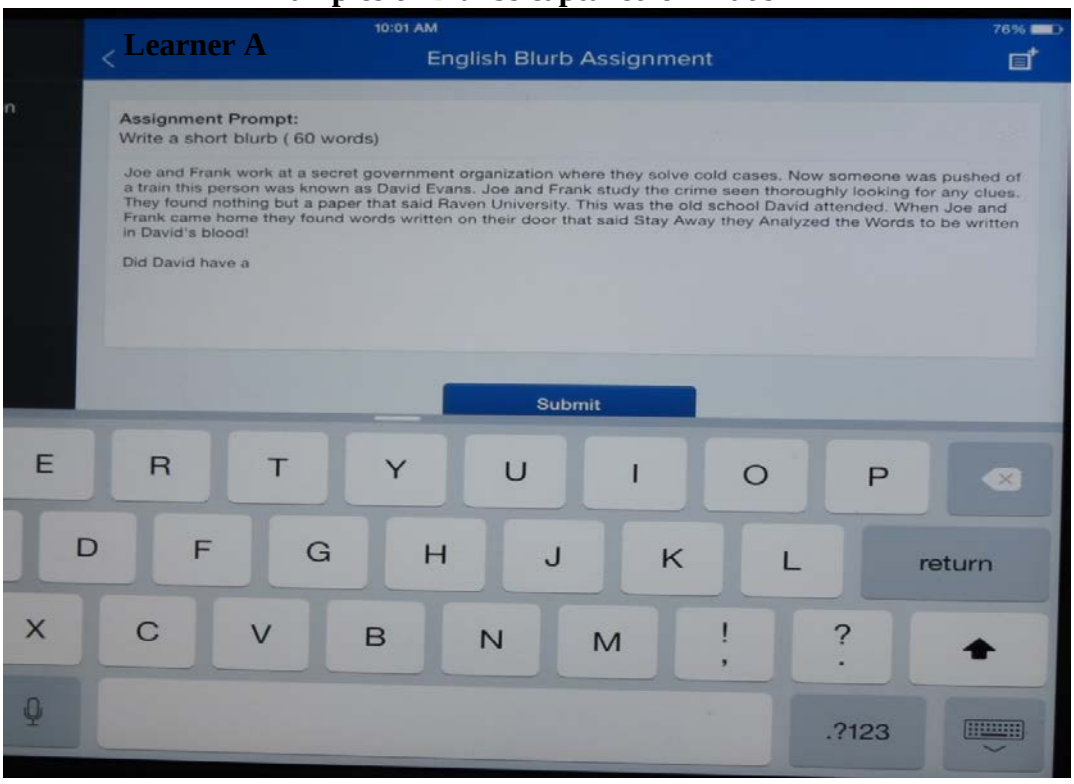


Figure 11: Writing Exercise -Blurbs

The edges of the iPad screen were cut to hide the identity of the learners as they used their names to log in on the Edmodo app. In the above example, the learner attempted to write a blurb.

Blurb for Learner B

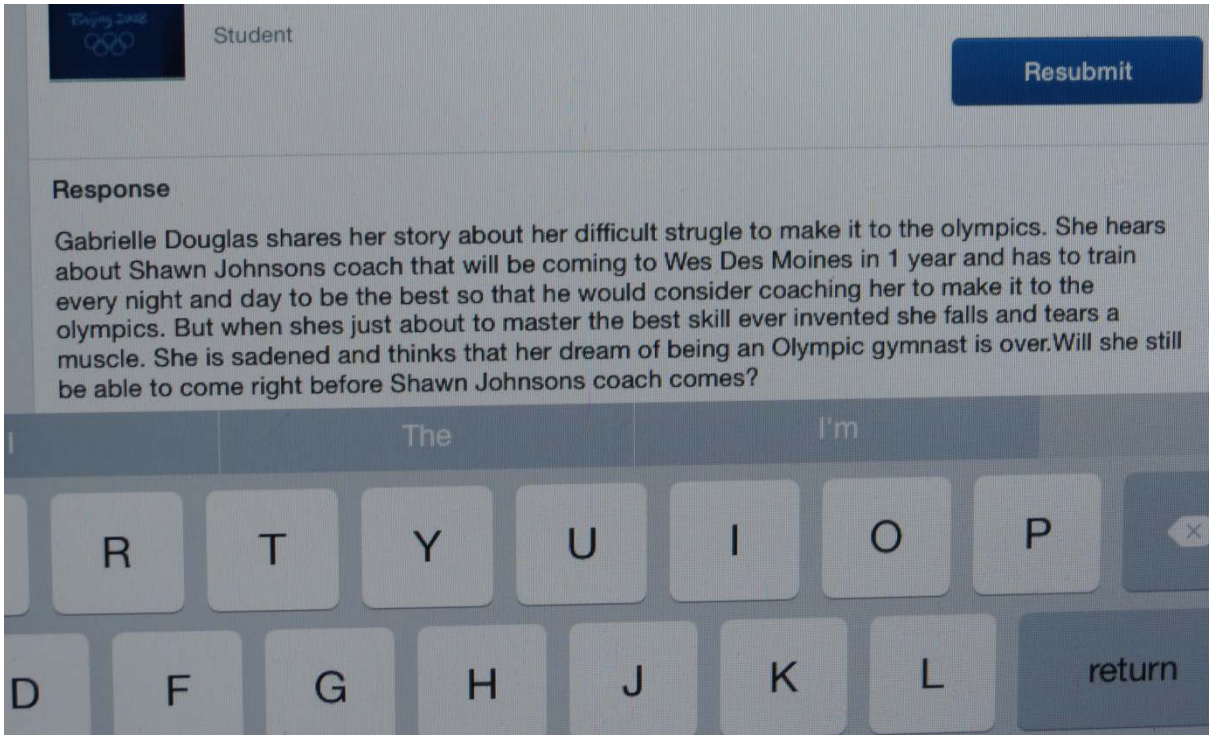


Figure 12: Writing Exercise 2

Lesson 4: Word Division

The last lesson description that was of interest to me was on word division and formation. The lesson was basically about how to count syllables in words. T demonstrated to the excited leaners how to divide words into syllables. The teacher explained the rules of dividing words into syllables as described below.

The first rule T explained was that words that have two consonants in the middle are split. He explained further that with words that have one consonant on the middle are divided before the single consonant. For example, ‘open’ would be split like O/pen, ‘exit’ for E/xit, and so on. The third rule was that a word is divided before the consonant with an ending ‘le’, for example ‘able’ would be a/ble, while ‘Fumble’ would read fum/ble. Lastly, T gave learners the final rule in which he explained that compound words are divided off, by prefixes and

suffixes. For example, ‘firefighter’ would be ‘fire’ and ‘fighter’ to mean a person who fights fire. T further explained that some compound words have three or even more syllables.

The learners were excited because the teacher gave them turns to use the teacher’s iPad to form and divide words into syllables that were already prepared on the iPad. Others watched the exercise projected on the interactive whiteboard. Some learners were able to make their mind up in advance which letters they were going to deal with when it was their turn. Others were discussing the words with each other beforehand. The learner’s iPad did not have the app that facilitated what they could do on the teacher’s iPad, i.e. the “explain everything” app.

The following pictures show some of the examples of the work that learners did on the teacher’s iPad, while projecting the work on the interactive whiteboard for the rest of the class to view.

Word Division

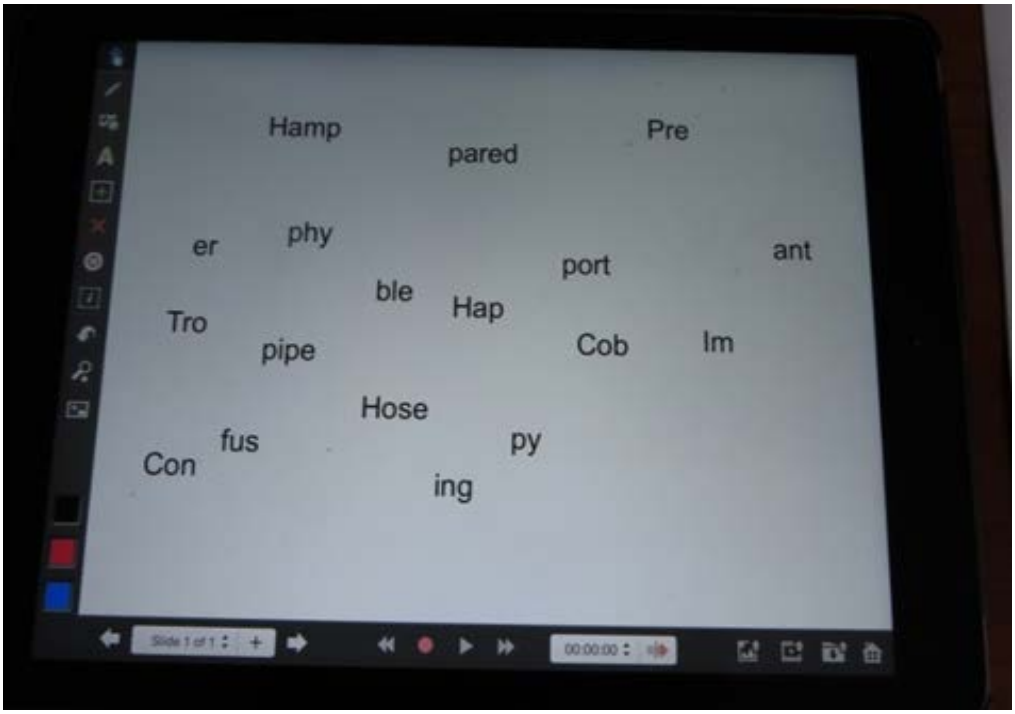


Figure 13: Word Division

The white word document was created by an app called ‘Explain Everything’. “Explain Everything” is a special app that makes it possible for the teacher to do many things in preparation for and during the lesson. It enables the teacher to record a lesson for the class beforehand, import pictures for the lesson and can be manipulated while demonstrating the

lesson in class. In this case, words could be played and shuffled on the iPad without losing them. See the picture in Figure 14.

Learner shifting parts of the words

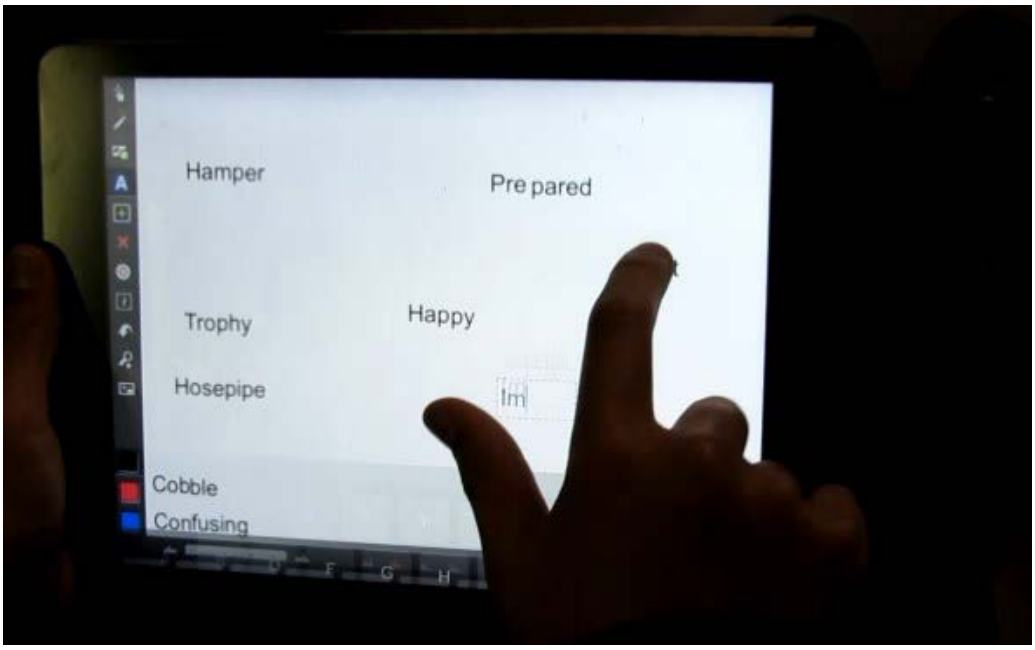


Figure 14: Word Division 2

4.3 Interview Data

In capturing the teacher's and learners' experiences and perceptions of ICT integration in language teaching and learning, interviews were audio recorded. In this section, I present data collected from the teacher, the HOD of the Intermediate Phase, the principal and the learners.

Interview 1: The Teacher

As stated previously, T was in his 40s, and was one of the most experienced teachers at K primary school, with an unbroken record of 15 years of teaching. Although he was relatively new at K primary school, he held iPad technology use for teaching and learning in high esteem. As indicated in the observation data, he successfully integrated the iPad in his English home language class. He perceived iPads as potential and effective tools for teaching and learning. T described the iPad as a potential tool that could be used effectively for language teaching and learning. This is what T had to say about iPads:

> I think that tablets can be used very, very effectively in language and literacy teaching….ah because it gives you access to students afterhours. Unlike in the past where you wrote homework on the board, now you can upload a lesson on the iPad. I think what we are aiming at eventually is that lessons will be taught in that form where everybody can access

> the lesson at home, watch the lesson then come to class to quickly discuss the things they did. For example, the lesson on gerunds, they come, we quickly go through the topic and they can check on words in the classroom and I can go round checking what they are doing. There is a lot on the internet, a lot of access to information that the kids can use to improve their literacy. You can upload things that your class can use, if there are three classes that happen to have the same lesson, three classes can use it. And the wonderful thing is that we are not restricted to an intellectual poor of say South African content. I can upload or download things from other international websites. I can go on those websites and ways of teaching, and I can use it during class and I think a lot of potential (Interview: T)

One of the questions asked how long he had been using technology, especially iPads, and whether he was comfortable using iPads. T explained that he had been using technology for a while although the use of iPad for language teaching was relatively new. He explained that he used the Interactive Whiteboard (IWB) quite a lot and was comfortable with it. He downloaded English lessons from the website called smarttec.com and was able to project the lesson on the interactive white board with Lumia technology. This he had been doing for more than four years. However, regarding iPads, T explained that he had been using iPads for about one year and half.

> Ipads,… about one and a half years, before that we had a Lumia technology which also runs on projectors. There are a lot of things you can do with that in language and grammar. There is a couple of websites where you can download specific lessons for language which I have been doing for about four years. I have it in my history, I think its smart board, no smart exchange, exchange.smarttech.com. It's a platform where you can load lesson and download but that is not part of Lumia but you can run it through… (Interviewee: T)

T felt that he was comfortable with using iPads although he expressed concern that creativity was hampered because of other duties he had to attend to in the school such as sports.

> ….am comfortable to use tablets but it is always difficult to come up with new and innovative ways of doing things because the schedule as a teacher is very busy. Especially with winter sport, so to come up new things is not possible (Interviewee: T)

T had good experience as a teacher in different primary schools in South Africa. He had been exposed extensively to the interactive white-board which he felt very comfortable to use in class at any time as earlier said. While T felt he was comfortable teaching with iPads, he also expressed uncertainty in teaching certain topics with an iPad.

> Some of the things I want to do in the future when I have more knowledge is to create wikis, create a pass week where everyone is expected to contribute something within time, and then maybe have different wikis and have them worked at in the classroom. We also have web quests, ah.. which we might do a little bit later to look at, specifically language and literacy. Unfortunately, there is not a lot of web quests on language and literacy. Time is the big thing because I haven't really thought about how to teach grammar using the iPad other than what I have been doing at the moment**.** Now I have thought about that a lot, I can't think of new ways (Interviewee: T)

Other questions of concern were whether there were guidelines with regard to ICT use for language teaching. T explained that there were no guidelines that guided language teachers for language teaching. But, when asked how curriculum standards were conformed to if there were no guidelines, he had this to say.

> There is no need to be fixed to the prescriptions of CAPS, otherwise you may not teach any lesson with technology. CAPS need to be complemented by other sources. So ah… as a teacher you've got to be resourceful… and well how do I maintain CAPS standards….to maintain standards, be selective on the web. Pick resources that are found in CAPS for example… the skill to do that does not happen overnight though, comes with experience built over the years. Websites such as Edmodo connects you to other teachers all over the world and you can find quite a lot of topics that can be helpful and you can just modify them to suit your needs, and others you don't even need to modify and so basically no need to prepare a lesson plan (Interviewee: T)

T further said that there was no specific district or school policies on ICT integration in teaching. The teacher was not aware of any policies in place, both at school and at district levels. However, T confirmed that the only policy he knew of was the White paper on e-Learning which did not specify how ICTs should be used in subject areas. T, however, believed that the Curriculum and Assessment Policy Statement (CAPS) should be revised in order to align and accommodate time to switch on and load iPads. According to T, a lesson without iPads did not waste a lot of time as was the case when iPads were used. Thus, for T, CAPS should be revised and schools should reduce the number of learners in classes for ICT integration to be effective.

> I would suggest smaller classes, reduced work load, and of course, time to be revisited because learning with iPads takes prolonged time because of issues of loading switching on, etc. (Interviewee: T)

T was also asked about how he used iPads in class. T explained that one of the advantages of using an iPad in class was the freedom to prepare the lesson in advance. He referred to one lesson he taught about blurbs where he allowed learners to watch and only explained a few things, then allowed learners to exercise writing blurbs.

> Well the iPad has been very useful to me personally. Sometimes, ah ah… well it gives you the opportunity to prepare your lesson in advance. For example, you remember the lesson I taught the learners about blurbs. That lesson was prepared in my own free time and all I did was to project it on the interactive whiteboard for the learners to see the explanations I was giving and that saved me quite a lot of time if you ask me. Except the time to wait for the iPads to come from the next class and distributing and switching them on… and… and sometimes I give the work through Edmodo and they work at their own pace at home and we only come to discuss answers. Unfortunately you won't be able to see that … maybe hopefully if I plan another lesson.. (Interviewee: T)

In addition, T felt that an iPad always engaged learners a lot except that he did not use iPads more often in class, except the time I (as a researcher) went to do research at the school. He was responding to the question about access to iPads in school. He felt that access to iPads was one issue that needed improvement and that not all lessons needed the use of iPads. Apparently, the class used iPads a few times in a week, depending on who were using them.

> You know what, since you have been here a lot more. Ah, one of the problems is access to iPads. You saw that sometimes we have them, and another we don't, so we try and use them in those periods three to four times in a week. Not always for this class but they have another teacher who have them for this class. So, ah, it can be as little as 20% or as much as 60% because not everything we do in class is compatible with iPads (Interview: T)

Apart from the workload that seemed to be a challenge for T in terms of preparing his lessons creatively, access to iPads and bandwidth or internet speed was also problematic. T strived to ensure that the learners used iPads in a way that engaged them online through apps such as Edmodo, Explain Everything, Khan, smartboards, including the website and YouTube. T explained his eagerness to do better, despite the challenges:

> You know what I haven't done yet is that… because we have had problems with the internet bandwidth here at school,… is that those lessons that I record on Explain Everything, they had to listen to and can be uploaded to you-tube as well… You can have your own you-tube, which is something we are looking at in future. And Khan Academy website is another great site where you can access everything related to education (Interviewee: T)

From the extract above, it appears that infrastructure development was one of the challenges T faced with iPad use in class. While T believed that the iPad had great potential to support teaching and learning, he indicated that generally there was a problem in South Africa with the internet speed or bandwidth as stated in the above extract.

Whether teachers had support from management regarding iPad use for teaching, T explained that there was a programme that took place and repeated in the afternoon every Mondays, Wednesdays and Thursdays. He said that the training was general in the sense that they were taught how to use an iPad, especially the Explain Everything app and how to insert pictures and how one could record a lesson, he added. How a teacher used it in class, was entirely up to an individual, T continued.

> We also have in service training at school and it is compulsory to attend a session a week where we get new concepts and most of the times it's the iPad. Everyone has his own iPad. So you go home and you play with it and do everything as a teacher. The apps that we use, we have information on how to use them, apps like explain everything, book creator, and keynotes. But, how we use those apps in our lesson is entirely up to us. (Interviewee T)

T felt that an iPad had the potential to enhance literacy development among learners although he had personally not gauged whether it had an effect on his learners since he hadn't been with them for a longer period. He believed in a period of one and half year was too short to tell if iPads had an impact on the learners in terms of literacy development. T explained that what was rather clear was that iPads naturally attracted learners, and so learners were always excited to learn using iPads in class. Although T had not tried to give them (learners) work that involved projects for collaborative work because of time to prepare such lessons, learners initiated collaboration on their own. He explained that to be sure of the impact of iPads on teaching and learning, it required more time and an investigation conducted on those who used iPads and those who did not. He believed that the teacher was the key person to make it happen, and if everything in terms of access to iPads were in place, it could potentially enhance literacy development.

Generally, T admitted that iPad technology engaged learners both at individual and collaborative levels. T was able to engage learners, especially at the beginning of the lesson to assist and ensure that they understood the lesson and instructions. Afterwards, while T was busy on his personal desktop, learners themselves were engaged in collaboration with others. When learners were happy with their tasks, they affirmed each other by a handshake. The next page shows pictures of learners working together and affirming each other.

Figure 15: Learners working together

Figure 16: Learners Affirming Each Other

The following section reports on an interview with the Head of Department.

Interview 2: The Head of Department

The Head of Department (HOD), referred to as H here, was between the ages of 30 and 40 years. Apart from his duty as teacher and HOD, H was responsible for managing Information Technology (IT). He was not the IT manager in the sense of a technician, but rather in charge of purchases of iPads and other related devices, as well as teacher in-service training. He planned for the training sessions on the latest apps for educational purposes. H had the view that iPads enhanced literacy teaching and learning. He emphasised, however, that the teacher was the key person in the success of ICT integration in teaching and learning.

H believed that education had to provide learners with skills that were relevant for the 21st century. In this regard, an iPad was a tool that engaged learners for literacy development. Learners could use the device to do tasks and to effectively communicate those tasks to others. The iPad also enabled learners to develop higher cognitive skills, especially if they were given the right guidance, he added. Below is an extract of H's views.

> It's about trying to get children within that language to use technology to figure out things out and respond to that within that language. So if you put a general question, to the kids,

> regarding anything, you would want them to use the IT to solve a problem using IT within that language and respond to that. It is not just reading and writing better, but to be able to analytically think within that language. A tablet is just a resource tool within a class to use. It's not necessarily the primary tool and not only a visual reflection about the text book that is in your suitcase. And I think that they use tablets with textbook on tablet just to … so a tablet is supposed to be a tool to use to find information and package that information and respond to that, so it's a resource tool (Interviewee: H).

When asked whether in his opinion the iPad impacted on literacy development, his reply was positive. However, H believed that teachers needed to change their mind-set or attitude towards the 21st century approach. He explained that working with the 20th century approach in the 21st century was not attainable. In this regard, H believed that teaching practices or the pedagogical approaches needed to be revolutionised to meet the current trends in education circles today. The extract below illustrates his views.

> In my opinion it does, but it will take a definitely pedagogically revolution in the teacher's mind. In other words, in order for that statement to be correct, and it is correct but the teacher will have to think in a different way, or the essence of the success of using it in the classroom management of the teacher. The teacher will not be able to think like the teacher 20 years ago. The teacher as the sole driver should think in the 21st century environment or thought. Then it can be successful. But to teach with the 20th century methods on a tablet, … it is not going to be successful. Teaching with 21st century methods on a tablet then it can be successful. So the essence of the question lies in the thinking of the teacher. Change of mind-set (Interviewee: H)

In terms of what support teachers received regarding the use of iPads, H explained that teachers were given help on how to use different apps which they could apply in individual subjects. However, how teachers used apps such as Explain Everything in teaching their subject was entirely up to them. It seems that staff training played an important role in ICT integration in the school for the teacher.

> At the moment we in K primary do not focus directly on individual subjects. We don't train our teachers focusing on individual subjects. We spend a lot of time teaching our teachers the correct methods and tools to apply in the subjects. We spend time teaching the philosophies and techniques to use tablets and we expect them to use those within their subjects (Interviewee: H)

Concerning the attitudes and challenges of teachers in the use of iPads, H explained that teachers were up to the task although not everyone liked the technology. But with support through in-service workshops, attitudes were improving. He also explained that teachers had not reported any challenges regarding the use of iPad in class. On whether the school had a policy that guided the use of ICTs in school, H disclosed that the school had an ICT policy on the use of iPads. He explained that individual teachers wrote a weekly report on how iPads

were used. H also explained that the actual monitoring to see if teachers had problems in the use of iPads was not done.

On whether the iPad encouraged collaboration and engagement, H said that the use of tablets, engaged learners more than a lesson without technology. According to H, all learners were engaged in the teaching process. He regarded this as the success of the device. He stressed the fact that learners could be engaged even at their individual level of ability within a lesson without necessarily causing others to lag behind, or vice-versa. For example, a clever learner can work at a higher cognitive level while a slow learner can work at her/his own pace. For H the iPad was a learner-centred tool and did not call for a teacher-centred environment.

H further noted that most of the teachers appeared to be trapped in their traditional ways of teaching. He explained that teaching without technology did not encourage group work. H added that ICT was interesting to learners and it was what they grew up with. So they could engage in collaborative work when given this opportunity in class. According to H, one of the core principles of the 21st century education was collaboration.

> Collaboration is a complex process but when you have the right technology involved, it is easier to manage the learners. We get learners involved at their own pace and level of ability and assign them work where others would be doing text writing, while others video and present. This way, they feel they own learning while you as a teacher facilitate. My perception is that it can enhance teaching in the essence of getting everyone involved in the class. I think that it is the biggest success of using the tablet within the class. With good classroom management, you can have every kid in the classroom involved whereas, before and with interactive whiteboards, it was difficult involving every kid. You would involve some and some left out. With tablets, you get 29 kids involved within the teaching process and that is the success of the device. You can get them involved at their level at the same time. A kid that is clever can work at higher level just like a slow kid can work at their own pace. So you would have 29 kids in the class but working at different levels all at the same time. It is a learner centred and not a teacher centred environment. By getting the children involved, you get them involved in their abilities in literacy and learning (Interviewee: H)

On whether the iPad enhanced literacy development, H felt that the impact of the use of iPads could not be felt immediately or within a short period. H believed that iPads were highly potential tools that enhanced teaching and learning for as long as the teacher embraced the device. H explained that ICT can enhance literacy skills but that as a school, they needed to conduct some investigations for a period of not less than four years. He noted that they (school teachers) could be sure if Grade four learners were put on observation right up to Grade seven to ascertain the impact of iPads on literacy development. Below is what H said.

> We have not done a specific study to see if it improves our marks. When we write out systematic test, it is too early now to say that it made an impact. We should take it over a

> period of time. It is still too new to see the impact now. To see whether it improves, we should get kids in Grade 4 up to Grade 7. We can get Grade 4 learners right through to Grade 7, then we can see an impact. Otherwise, we have not done a study to see the impact and it is still early. It is something that we will do. Our aim now is to enable students develop skill, to make them have learning skills to make them better employees. But definitely I know that iPads have an impact on literacy skills otherwise we were not going to use them in the first place. I use iPad in my class so I know how they are engage and collaborate in Afrikaans home language. All we need to do is conduct study so that we can tell a better story beyond collaboration and individualised learning it provided (Interview: H).

H concluded by highlighting that if only teachers could change their mind-set, teaching with iPads which learners are exposed to always anyway, could be fun. He added that as a school, they were not there yet, but that they were striving to make sure that all the teachers became comfortable to use iPads in all their lessons in their individual iPads. The section highlights the interview with the principal.

Interview 3: The Principal

The school principal (P) had nine years of experience as a class teacher and 19 years as a principal. He had been at K school for four years during the time of data collection. At his current school, he initiated the use of iPad technology because he was a specialist in this area, and believed in the use of ICT to support teaching and learning. The school started using iPads in 2013. Before that, the school used computer laboratories where teachers took turns to use it for educational purposes. Even so, teachers who taught subjects such as science used the laboratories the most. The principal explained that the initiative to purchase a set of 32 iPads for each phase, turned events around. P admitted that it was a drastic change which happened so fast that not all teachers were comfortable with the turn of events. There was silent resistance from the teachers, but slowly, teachers had accepted the technology and were using it successfully. This is what P said:

> But there was a huge resistance in the beginning of 2013, with the tablets we brought, … we brought in, it was difficult with Interactive White Board as well, although they had computers in the classroom. In 2013 when we… so we were still busy mastering the interactive whiteboard and we started bringing in the tablets in 2013. There was a huge silent resistance about iPads (Interview: P).

In K school, the strategy for the iPad implementation started with the head of departments who were trained as 'iChampions' in their respective subjects to encourage other teachers. According to P, this was one of the best moves to implement iPad use in the school. Although the school did not have a written policy regarding the use of ICTs, the school had a system that recorded all activities which teachers did to support learning. P monitored the use of technology through the school system saver managed by an IT specialist who made it

possible for the school principal to view all activities going on in all classes. The extract below gives a sense of how the school operates in the absence of a formal ICT policy.

> Most of the policy is all based on verbal policy. At my old school, the staff had a gap. We are re-introducing it now. There is no worded policy but there is on our computer system, let's say Grade 6, with all the topics in English; then we have English 1, and under English 1, we have the planning which is a document, field resources (teachers adds all additional learning materials), depository on interactive white board, and media. Every teacher in his subject must have a depository with material available; such as written texts, videos, explanations of teaching from Edmodo,… teacher is depositing and Christ (Pseudonym) next door organises a depository of every teacher's depository in an organised way retrievable later if they want to go back to it. I will show you how it works … but …. but... you see from here, I can actually see everything. See this teacher used these pictures for creative writing and so… I gave teachers time to adjust but next year I am going to be strict with them (Interview: P)

P further explained that the success of the iPad rested in its ability to present text in all formats. For example, P explained that unlike in the past where learners were only exposed to type of text or print media, today the iPad is made in such a way that you could download pictures from the internet, take photos of something, record a video and use them for teaching and learning. With an app called Explain Everything, P added, this (Picture import- above) was what made the iPad use successful in K school. He described the iPad as a tool that appealed to more than one sense. He stated that learners could create texts from pictures downloaded from the internet or related aids which made them multi-literate. In addition, P elaborated on the success of the use of iPads for teaching because they orientated teachers every week during training that did not take much of their time. Below is the principal's explanation:

> One of the apps is explain-everything. The teacher can type, write, put a picture, and shoot a video. He can also record himself while he is teaching and automatically upload it to you tube and put it on the web for the kids to use. The teacher does not stand in front of the class anymore…..The training is not long. The teachers use specific tools like usual email, app for putting content on together. They try to take time on the normal school day to improve…..(Interviewee: P)

In a follow-up question on how the apps could be used in literacy skills development, P explained that the apps teachers were taught was Explain Everything which allowed them to import pictures and record videos, as mentioned above. However, P further explained that teachers needed to be creative and gave an example of how the teacher could use the iPad to teach literacy skills. Below is an example.

> What you can do is this…. For example, if you are creating poetry or story you can have two or four children in a group. Again, there will have to be some development in teaching as to how to put these tools together. But the kids are quite bright with these things. They know how to open files and so on, so you can have two or three kids and give them a task to do,…

> We are going to practice the story today, and the story is about this, the story is going to be about something that happened in the past, meaning you deal with past tenses and you say you create the story and so the need is the past tense in the story. Then kids can collaborate to create the story, visually and verbally present it. (Interviewee P)

Further in the extract above, P explains that if the teacher was creative, learners would collaborate on the task in order to get them to share ideas. He pointed out how in essence a flipped classroom worked and admitted that it required preparing in advance.

> You can break it down in different ways. You can ask them of the opinion of what was presented. You have heard of the flipped classroom, so in essence you are creating a flipped classroom. So lots of people may criticize, that but it is far-fetched but we will now get children engaged. You can get a lot of rules, because they know most of these rules without you standing in front of the classroom and teach all the rules. But it takes a bit of more preparation. But a diligent teacher like Miss aah…. So that is an example of collaborative learning and you can analyse a poem, do comprehension reading, etc. From a teacher's perspective, you can present a much more colourful message. (Interviewee: P)

Moreover, P highlighted that while iPads enhanced literacy skills, most researchers were quick to look for the results of using iPads instead of what skills were needed to be given to learners first which could eventually lead to literacy skills. P illustrated the concept of iPad use which he felt should be the concern of every researcher or policy maker before they thought of its impact on literacy. In his opinion, P felt that emphasis on access to technology was first priority and necessary. After the excerpt below is a visual representation of P's 'difficult concept' of what needed to be done to realise better results in literacy development among the learners.

> I will present you with a very difficult concept. The question you are asking is the question that has been asked at all levels. And I personally think it's a wrong question. The… it is all about getting a tool into the hands of the kids. It's about a tool. And that tool can do a lot of things. Ah, it gives you the ability to find resources, gives you access to materials, access to your lecturer or teacher, access to your friends, and all those things. What, ah, … it will… then if you take this at the education level, [illustrates with hands in the air] that we all know, and you take it that below this line, we have English, maths, geography. The focus in research is that, they want to know how much those tools improve the ability of the students. But what we have to understand is that we… those tools… we are completely putting down a new layer of information, and that layer of information is this tool, …. we teach learners to get access to resources and thinking differently about education. Now if we take that access to information, then, for example, browsing through a dictionary, the child's ability to look at two, three different dictionaries at the same time is great …. that will have an increased effect on those aspects… reading, writing, grammar mathematics**…**.(Interview: P)

The visual illustration below represents P's concept which he said was what the school strived to do. He narrated that the school was working towards purchasing more iPads and apps such as Explain Everything so that each learner could use them to import and manipulate visuals on their iPads too in the near future. The school only managed to purchase

Explain Everything for teachers to enable them present their lessons in a more fashionable way.

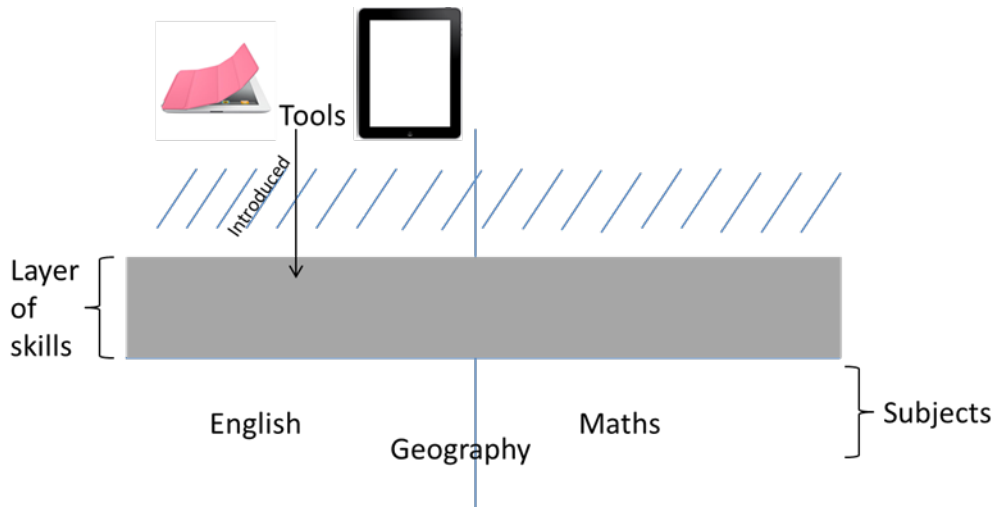


Figure 17: Layer of skills introduced by technology

P's concept in the above visual illustration was to unlock the skills that technology brought along with by ensuring that learners had access to technology and had the necessary skills to use technology to handle any information presented in more than one form.

In addition, P believed that teachers should be digitally exposed because they were at the centre of teaching and learning. He explained that teachers needed to be proficient in technology and only then would they be able to be confident in teaching in a digital age and assist learner's with skills that needed them to handle much more information. Here is what P said:

> The basis is that every teacher should be technologically sound and there should be technology into the class…you understand? It is about getting the child to know technology and, and, and… ah make them handle much more information. If for example, you study one of Shakespeare's' easier stories, you can very easily ask the groups in your class to each… to look at different interpretation of one of Shakespeare's stories and you can have a complete discussion and feedback. Whereas in the past you give them one interpretation of someone's Shakespeare's interpretation… now they look at 6 interpretations. It's about teaching the children skills to handle technology and therefore handle much more information and that is a layer of skills they need to be exposed to before we can talk about the impact of …. Ja… (Interviewee: P)

In the following section, I focus on the interviews with the focus group of learners.

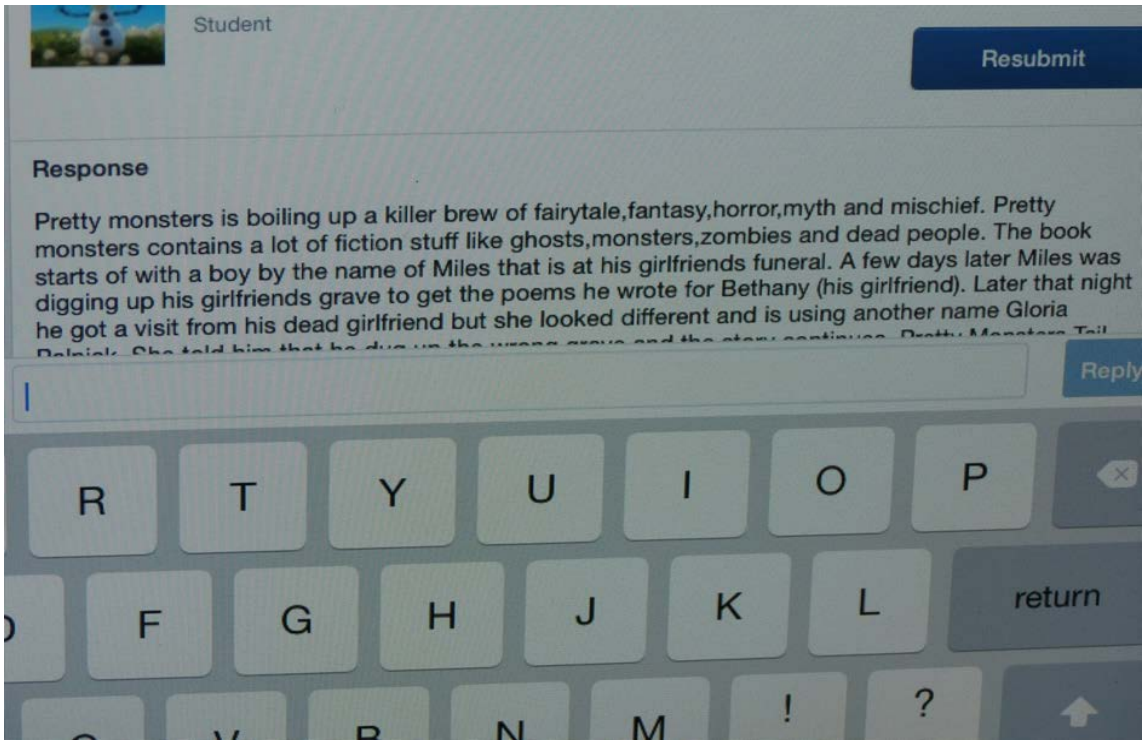


Figure 20: Writing Exercise 3

The above snapshot shows what the learner wrote about, ‘pretty monsters’, while the snapshot below shows another learner who wrote about a school called ‘monster’. Both writings were extracts from one of the lessons about blurbs.

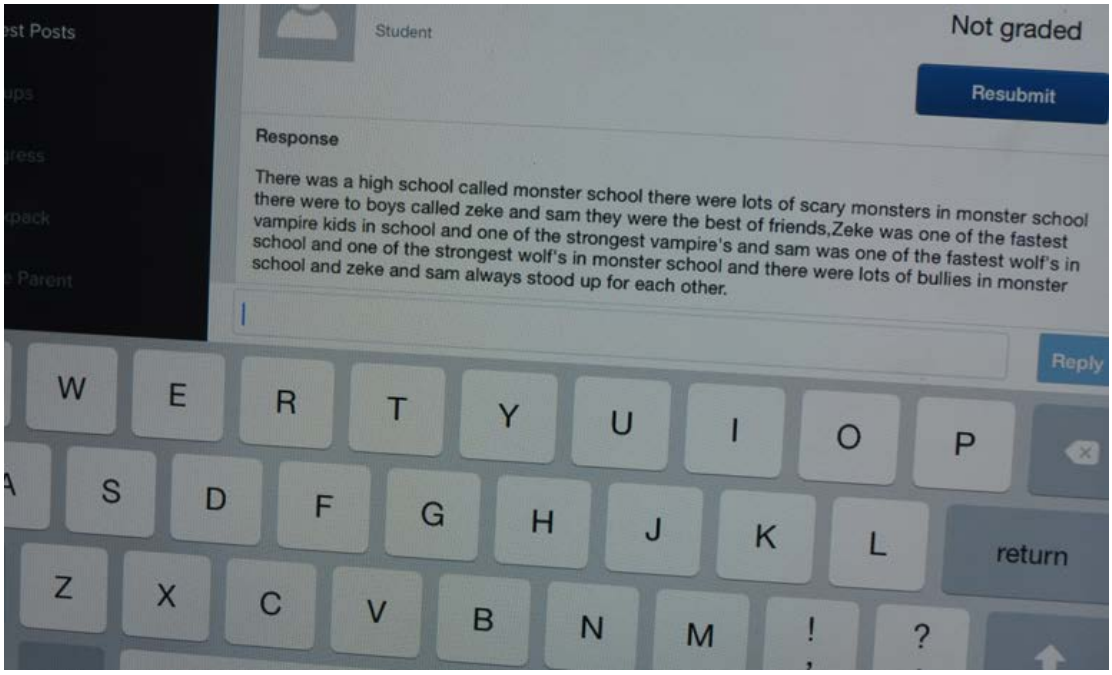


Figure 21: Writing Exercise 4

4.5 Data Analysis

In this research, data analysis was purely qualitative. The goal of data analysis is to uncover data in order to understand the big picture or make sense of the phenomenon through coding (Denzin & Lincoln, 2008). In other words, the transcribed data was closely examined by taking apart or stripping chunks of words, single words including sentences. Atlas.ti 7 was used to analyse the transcribed interviews as well as the recorded videos. Atlas.ti 7 is a software package that allows the researcher to transcribe, analyse and organise data in a systematic form (Coders, 2013). Using atlas.ti.7, enabled me to code videos, audios, as well as pictures which were part of the artefacts that were analysed for this research. In coding videos or audios, the researcher is enabled to select specific segments which are showed in time period for the selected segment as in the example below.

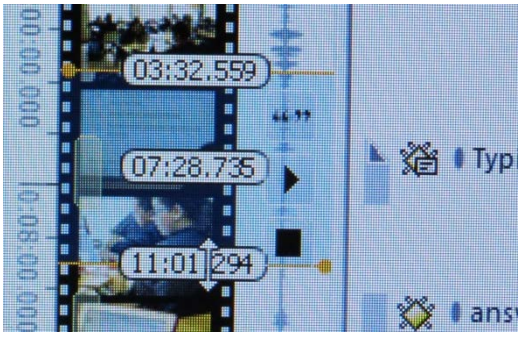


Figure 22: Example of Video coding procedure

Coded data was further analysed and classified according to general themes. In the next section, I focus on the data analysed via atlas.ti.7 software package.

4.5.1 Emerging Themes and Discussion

Data analysis of the transcripts focused on how iPads were used in Grade six English Home Language teaching and learning. In this regard, the investigation considered how the learners interacted with the iPad and with each other through teacher facilitation. The patterns emerging from the triangulated data from interviews, observations and documents are summarised into four themes below.

1. Influence of Socio-Economic Status (SES) in ICT Integration for learning
2. Influence of ICTs on Literacy Development
3. Teacher Disposition and ICT Integration
4. Dynamic Assessment
5. Potential Barriers to ICT Integration

4.5.1.1 Influence of Socio-economic Status (SES) in ICT Integration for learning

From what was observed, the data indicates that prior knowledge of ICT use renders learning stress free in school. Results show that the learner's prior knowledge of the use and access to various ICT gadgets, including iPad tablets at home, made their learning struggle free. Out of the six (6) purposefully selected learners with the help of the teacher, all six (6) of them confirmed that they owned digital technology at home as reported in Section 4.2.3 interview 4 above.

The responses from the learners indicate that the socioeconomic status (SES) play an important role in learner achievement in school. SES can be described in terms of individual or families' financial status which could either advantage or disadvantage learner performance in school. According to the American Psychological Association (2009), poverty adversely affects their children's rate of literacy development in school. This is particularly because such families barely afford basic resources for literacy development such as books.

This finding is consistent with the literature discussed in chapter two of this study which indicates that access to technology enhances literacy development in learners (Hutchison et al., 2012; M. Pellerin, 2012a). Literature also shows that disadvantaged schools lag behind in literacy development (Gudmundsdottir, 2011; Shandu, 2011; United Nations, 2013). In addition, studies conducted by Doctor Stephen Taylor (2012) in South African Grades 3, 4 and 5 classrooms indicated that family SES ascertained their children's educational performance in school to a larger extent. By implication, learners coming from high SES standing perform better in schools than their counterparts who come from poor backgrounds. This is consistent with responses given by learners in K school. Many learners in K school come from high social status and their parents could afford to give them access to the basic literacy resources such as books, including technology (Chiu & Chow, 2015). This has enabled learners at K school to appear comfortable with iPad use for learning. Furthermore, it appears that access to of technology has enabled most learners at K school to learn easily, although their literacy skills development was not explicitly investigated.

Similarly, SES connects with the sociocultural and constructivist theories claims that language is a mediated process organised by cultural artefact (Lantolf, 2000; Taylor, 2012). The literature revealed that the goal of the theories above recognise learners' prior knowledge from their socio-cultural environment because that is what enhances learning, particularly

literacy development. In other words, teachers need to use the learner's prior knowledge as a building block for new knowledge (Bransford, Brown & Cocking, 2000). Moreover, it is inconceivable, according to the constructivist theory, to enhance literacy or learning outside the learners' experiences because learning is a fluid constructive process and therefore, acquisition of new knowledge should be contextual (Lefever-Davis & Pearman, 2015).

All the learners acknowledged that they mostly used the ICT gadgets to play non-educational games and to chat with their peers on social networks. Very little time was spent on using the ICT gadgets to type or work on school projects.

The idea above confirms that technology, whether face-to-face or in a virtual environment, fosters social interaction which is again the core value of the constructivist view (Lefever-Davis & Pearman, 2015). Language is a mediated process, so cultural artefacts such as social media, iPads and many others enhance learners' literacy awareness as they enable them to engage in meaning-making negotiations (Urguhart & Weir, 2014). For example, of the six learners, one of them acknowledged using his iPad to share school homework with his colleague. This implies being engaged in meaning-making while in a virtual learning environment. This was a rare practice because many young learners spend time chatting with friends on social media.

The second lot of results indicate that iPads used in a lesson engaged learners more than in a lesson without an iPad. Learners explained that it felt good to know that they would be learning with an iPad in class. Learners seemed to have more fun when they used iPads to learn than when they did not use them. They seemed to be more engaged (Dawson, Heathcote & Poole, 2010) when they were using iPads because iPads offered more in terms of what they could search on google. This links with the literature reviewed about active learning under principles of learning styles. Literature indicated that learning as a social practice should engage learners actively as opposed to parrot fashion learning where learners are passive receivers of knowledge (Bransford, Brown & Cocking, 2000). The learners also explained that it was good to learn with iPads because at home iPads were mainly used for non-academic activities. Words that were not clear to them could be checked through online dictionaries. Moreover, learners felt that unlike the printed textbooks, iPads gave them an exciting and wide range of materials to look at. This implies that learners who have confidence and positive perceptions of the role of ICTs in their learning, are likely to learn better, and develop strong literacy skills. Online dictionaries open more avenues for literacy

skills development because of the different interpretations the online sources may display to them. This directly or indirectly enhances their learning of literacy. These findings demonstrate how today's learners are active users of emerging technologies. This directly and indirectly call for teachers also to be well abreast of emerging technologies for educational purposes.

4.5.1.2 Influence of ICTs on Literacy Learning

One of the recurrent themes is that of engagement, which is influenced by the fact that the features of an iPad such as the soft touch screen, ability to use fingers, and using voice to search for information, appeal to learners. An important factor which influences engagement that is provided by mobile technology is that feedback is given in real time (Blackwell, 2013).

As mentioned above, knowing that learners were learning with iPads enhanced their engagement as evident during observations. Literature on engagement and prior knowledge of learners shows that learning is fostered learners are able to relate with what they already know (Cisco Systems Inc., 2008). From their engagement with their tasks in class, it appeared that learners' metacognitive skills were also enhanced. Literature reveals that technology enhances learner engagement because of its multimodal functions, and this in turn, enhances metacognition among learners because the learners' affective, cognitive and psychological functions are activated (Pellerin, 2012b; Pellerin, 2014).

The notion of seamless learning (Li, Pow, Wong & Fung, 2010; Wong, 2012) also was apparent and encouraged learners to engage with the iPads. Seamless learning entails learning "whenever and wherever" learners are (Wong, 2012). It raises their curiosity and they easily switch learning contexts, for instance, from formal to informal, or personal to social. A key component of this interaction is that each student should have their own dedicated mobile device. Using mobile devices allows students to physically move around various different locations with their devices and communicate with others, and thus learn across spaces (Blackwell, 2013).

During lesson observation, learners moved about within the class with their tablet technology to initiate their own collaboration with others, other than sticking to the prearranged seating arrangement. This happened more often without the teacher's interference or directive. It appeared that it was more convenient to learners to initiate their own learning support teams

and this created a warm learning atmosphere in the classroom where learners could talk, read and write together. Such activities contributed to their literacy learning. In an interview, learners also confirmed that they stayed in touch with classmates through ICT devices outside the class time. This suggests that literacy skills development can be extended beyond the classroom walls (Wong, 2012). In an interview with the teacher, T explained that learners and him were able to use the device in the classroom, and still stayed in touch with the teacher while they were at home.

Having this portability enables students to further explore their interests in a subject at any given location. Mobile devices can, therefore, help to augment the current environment of children by providing access to information while on the move and working with others through collaboration.

Collaboration is one of the platforms promoted by mobile technology, since it is able to stimulate social interactions among learners in the classroom. An iPad enables learners to engage with subject content because the device is easily portable and so learners can view information anywhere, any time (O'Mahony & Siegel, 2008). The iPad motivates learners to search for any information and as they search, they are forced to read and sift out which information is credible (Karsenti & Fievev, 2013) for their tasks while enhancing their reading and writing skills for their lifetime (UNESCO, 2014). Clearly, iPads provide an opportunity for learners to take ownership of their own learning while they discover knowledge under the guidance of the teacher. During class observation, learners were able to work together and expand each other's knowledge. When learners seemed to understand the concepts without the teacher's intervention, learners affirmed each other by a hand shake as indicated in figure 16 in this chapter above. In sociocultural and constructivist perspective, the most important forms of human cognitive activity develop through social and material interactions (Lantolf, 2000; Lantolf & Poehner, 2008).

From this, it was clear why the introduction of iPad to aid the learning process (mediation) was at the heart of K school as confirmed by the principal in an interview. Relating to mediation, the core value of the sociocultural theory is regulation or self-regulated learning (SRL). Regulation has three main aspects that must underpin the process of learning, namely the Object, Other and the Self (Açısı, 2011; Lantolf & Pavlenko, 1995; Lantolf & Poehner, 2008). The object in this case is the tool (iPad) which the P described as one that appeals to more than one sense. iPads are types of tools that helps to generate regulation because they

use animations and images to help with comprehension of text of different forms (multimodal) (Jewitt, 2012; Jewitt & Kress, 2003) as indicated in the reviewed literature. The other aspect of regulation is the 'other'. As indicated in the picture in figure 15 apart from the teacher who gave feedback to the learners, learner-to- learner interaction mediates literacy learning that eventually lead to self- regulation. Self-regulation will be discussed a bit later.

What the learners were doing during the period of this study was to shape one another's knowledge which they could later use on their own to position themselves in the larger context of the world (identity) also reviewed in the literature (Porter, 2005; Warschauer, 2000). The teacher (T) in his lesson presentations taught the learners about certain grammatical forms such as word division as an "expert other", whereas the learners as indicated in the picture shared knowledge; one acting as an expert. The acts of mediation can be implicit (learners in figure 19) or explicit (Teacher on word division Figure 13 and 14) feedback, the baseline is that in language learning such are features of regulation, leading to self-regulation (Ortega, 2014; Ortega-Llebaria & Colantoni, 2014). In the next paragraph I focus more on individualised learning.

One of the most important aspects of sociocultural and constructivist theories is that an individual emerges from the social interactions with others (Ortega, 2014). Ortega (2014) highlights how the theories such as the one used in this study should be able to explain knowledge and cognition, interlanguage, first language, linguistic environment and instruction (p.246). The sociocultural theory, as stated earlier, for example, claims that language is aided by socially engrained artefacts which could be used in a particular social context and culture which includes schools as institutions (Lantolf & Poehner, 2008). Relating what happened in T's classroom at K school can be seen as a particular context, the school. Most of the lessons observed were purely individualised learning tasks. Individualized learning denotes an approach or method of instruction whereby the content of a particular subject, instructional technology as well as the pace at which learning is taking place, is premised on the capabilities and interests of an individual learner (O'Mahony & Siegel, 2008). In this regard, the individual learner is now striving towards SRL, as earlier mentioned.

The analysed data showed that learners had different learning paces in the class. While this could be understood in the sense that other learners worked at a slow pace, it was also possible that others chose to work alone. The teacher who took the role of facilitator at the

beginning of the lesson left learners working individually on the tasks. It appeared that learners had no choice but to work individually to complete tasks. However, what was interesting was to see learners initiating collaboration to answer questions. As SCT suggests, it may be assumed that learners at this point needed expert opinion from their fellow learners as they engaged with their task on their individual iPads (Lantolf, 2003). The learners in the collaboration who acted as "expert others" supported fellow learners to navigate their way towards SRL (Lantolf & Poehner, 2008; Ortega, 2014).

Taking the historical perspective on how humans develop tools, Vygotsky argued that humans could develop mental ones (artefacts) (Vygotsky, 1978, 1987). With T taking the role of facilitator, he was assisting learners to shape their individualised mental processes in collaboration with others. Other linguistic semiotic resources (individual learner iPad) also mediated the learning process. Through tasks which learners eventually discussed with others and some opted to work alone, learners experienced private language, which in this case, contributed in shaping learners' literacy skills. Language as a cultural artefact which relates to thinking and speaking, has two aspects, namely the inward and the outward aspects (Lantolf, 2003). In the literature review these were referred to as the intra and inter and intra-psychological planes (Lim, 2002b).

In relation to inter-psychological plane, T as a facilitator, helped learners shape their process of internalising the literacy skills through the tasks he gave them (Lantolf, 2003). At an individual level, learners were trying to internalise through private speech. T did this by allowing learners to take the lead in giving solutions to tasks, and sometimes asking them challenging questions in order to challenge their thinking. This is consistent with the sociocultural theory which encourages higher order cognitive development (Lantolf, 2000). For example, learners planned how to present their work on blurbs in front of their classmates. iPads as cultural artefacts appeared to engage learners in the process of internalising linguistic resources towards maintaining SRL (Lantolf, 2003). Consistent with most studies (Clark & Luckin, 2013; Godwin-jones, 2011) e-learning, or learning with technology such as the iPads enables a more personalized learning environment. Self-regulated learning (SRL) can be understood in relation to the Zone of Proximal Development (ZPD) and scaffolding. In the following section, I discuss more on ZPD and scaffolding as how they featured in data analysis of this study.

Many teachers misunderstand the concept of scaffolding. In fact, to some teachers, scaffolding equals ZPD. As one of the recurring themes, scaffolding refers to a deliberate move to assist a learner to accomplish their aim in learning (Chaiklin, 2003; McLeod, 2007; Vygosky, 1978). According to Sawyer (2006), scaffolding denotes the support given to the needs of a student with the intention of helping the student achieve his/her learning goals. On the other hand, ZPD refers to the gap between learner's inability to do a task on their own and what they can do on their own (Lantolf, 2000; Lantolf & Pavlenko, 1995). Interestingly, scaffolding in this instance is quantitative in nature. It deals with the amount of help given to the learner towards their regulation point while ZPD is qualitative in nature because it deals with the quality of assistance given to the learner to have quality SRL (Lantolf & Poehner, 2008). What this implies for literacy development is that help given to the learner should be accompanied by quality language mediation. Therefore, iPads cannot replace the work or duty of the teacher, in this case. Teachers ought to be physically present in order for learners to use language literacy artefacts such as iPads effectively and to provide quality teaching and support the learners need.

T appeared to be aware of scaffolding learning. For example, in the comprehension lesson, learners were shown online where to find the comprehension task and were allowed to answer the questions after they had read the passage. Lantolf (2000) notes that scaffolding is an aspect of teaching which teachers often hang onto, at the expense of quality assistance. He notes that teachers do not distinguish between ZPD and scaffolding; instead teachers give more assistance to learners in the absence of quality mediation. For literacy lessons, T probably needed to focus more on the quality of dialogues he gave learners so that learners, either through self-initiated collaboration, could be engaged in quality and authentic language dialogues to support their language skills.

The role of the "expert other" is crucial for authentic learning and literacy development. It should be a continuous process so that learners could attain SRL and use the skill independently (Lantolf & Poehner, 2008). For example, in the blurbs learners wrote and presented above, figure 11 and 12 one of them did not intrigue the teacher and he was advised to add a few words that could lead to suspense and persuade people to buy their product. The learner did not get it right the very first time; he needed more scaffolding.

As discussed in Chapter two, scaffolding undergoes four stages, setting the scene, modelling, joint construction, and independent construction (Copple & Bredekamp, 2009). In language

and literacy lessons, setting the scene involves explicit explanation about the topic and unpacking of vocabulary. Modelling is about giving learners a model of a written piece of work and its procedures, while joint construction entails writing a similar piece of work together with learners. The final stage involves allowing the learners to write their own piece of work with minimal assistance. Observation data shows that T did not follow all these stages of scaffolding. My summary of the scaffolding process that T appeared to have skipped would be: 'I do, you watch; 'I do, you help'; 'you do, I help'; and 'you do, I watch'. This could have improved the learners' understanding of a blurb. From Lantolf's (2000) perspective on teacher's misconception of the ZPD and scaffolding explained earlier, the implication of T's way of literacy teaching could have been relevant if his learners were home language learners who did not need a great deal of scaffolding and a gradual release of responsibility. But almost all the learners were not home language speakers of English, although they took English as a Home Language. However, these learners had adequate exposure to English in their immediate environments.

Finally, apart from authentic and quality language dialogues, T's learners could be assisted to decode all forms of texts with an emphasis on meaning making through visual texts. T's help appeared to be more on how to use the iPads than for developing learners' language and literacy skills. Apps such as "Explain Everything" could be used to present different forms of texts, visual or otherwise, from which learners could use iPads as mediational tools to engage in meaning making through the process of scaffolding, as explained above. "Explain Everything" is designed specifically to aid lesson presentation in a manner that allows the teacher to record his/her own lesson presentation and upload it on his personal YouTube account for the class. It could be used to prepare for flipped classrooms where learners would be given tasks that they can access while at home, discuss it and then present it in class the following day. The aim is to present learners with many opportunities that could help them decode language codes (Krashen, 1989).

Krashen's input hypothesis (IH) enables teachers to ensure that the first stage of the scaffolding process is thoroughly done, because how learners comprehend language determines their literacy acquisition (Krashen, 1989). Preparing flipped classrooms where learners work at their own pace i.e. visual clips should enable teachers to put in place strategies to develop learner's literacy skills. Thus, "Explain Everything" could be used as a tool to mediate literacy skills at the learners own time through recorded short video clips intended to help or support slow learners who struggle with certain tasks (Sandvik, Smørdal,

& Østerud, 2012; Cviko, McKenney, & Voogt, 2015). The teacher must be in a position to go extra mile for this process. This leads me to discuss more about teacher disposition and experiences.

4.5.1.3 Teacher's Disposition and Experiences in ICT Integration

Teacher disposition is one complex topic that has various definitions and angles from which it can be viewed. For the purpose of this study, the definition of teacher disposition was shaped by Hallam (2009) and Vaughn (2012) who refer to teacher's attitudes, beliefs and temperaments towards life. In other words, teachers' disposition is their mood or general attitude about something. In my study, teacher disposition refers to the teacher's tendency and pedagogical ability to use technology for language teaching and learning. I argue that if the teacher's perceived attitudes are positive, coupled with professional orientation in technology use for language teaching, the teacher is more likely to be effective in his/her teaching. This implies the affective perspective of teaching and learning. This also goes with how a teacher provides quality and meaningful learning experiences that make the learning experiences fun too.

At K school, T appeared to possess these qualities even though he lacked certain experiences in teaching other language aspects through the use of iPad technology. In an interview with him, T referred to topics such as grammar teaching on an iPad that seemed to be a challenge. It was evident that T's positive disposition was geared to move learners to SRL. This positive disposition was influenced by the amount of professional orientations T was given in school regarding the use of iPad technology to his teaching. Therefore, teacher attitudes, beliefs and professional development and support could be regarded as important factors in ICT integration. However, professional development needs to be subject based on subject specific as well (Shallcross & Robinson, 1999). This would be useful for individual teachers such as T who lacked expertise to teach certain topics with an iPad (Rodrigues, Marks & Steel, 2003). In the next few paragraphs, I focus more on teacher attitudes, support and perceptions of ICT in relation to the analysed data of this study. The teachers' attitudes towards technology emerged as one of the key factors throughout this study, especially from the teacher, the head of department and the principal. The teacher as the sole driver of learning must embrace technology in order for it to be integrated successfully (Barbour, 2012). When a teacher is convinced that technology has a lot to offer to their teaching practices, they are likely to develop love for technology. T's use of iPad in class attested his positive disposition

towards ICTs. He was eager to use the iPads every day, although he could not as the iPads were used by all the Intermediate Phase classes. He encouraged his learners in the use of iPads.

At the heart of technology use, teacher support from the custodians of the curriculum in school contributes to teacher disposition in the class (Ertmer, 1999; Ertmer& Ottenbreit-Leftwich, 2010). This of course is an institutional factor where administrators must endeavour to equip teachers with the necessary tools for them to succeed in integrating technology in teaching. In this regard, teachers are regarded as agents of pedagogical mutation who, if they lack exposure to technology, the consequence is on the teacher's efficacy in class (Ertmer, 1999). T at K school appeared to be on top of technology use. He hoped he could do more if certain other skills he lacked such as teaching grammar with iPad were acquired. It appeared that T needed peer support in language teaching e.g. his fellow language teachers. For their busy schedule in school, it appeared that it was not possible for language teachers to make time for such means to offer support to each other. Opening a chat room through the school Edmodo could help them discuss and enhance language literacy practices further as the general teacher development in the school was not subject specific.

Technical support equips teachers with basic skills on how to handle simple trouble shooting cases such as intermittent internet connection. The teacher at K school showed experience and was able to handle simple technical issues with iPads such as rebooting if it froze. While the teacher was equipped with these skills, he was able to use the iPad in class successfully, while learners enjoyed the benefits of an iPad. Teacher support appeared to be paramount in the success of ICT integration in the school. While technology may be viewed as an invader of the traditional comfort zones of teachers, with support and exposure to an expanse of technological domains or apps, teachers can manage technology in the classroom. Once teachers are capable of using technology, they are equipped to facilitate learner-centred lessons at different paces (Blackwell, 2013).

Positive perceptions of the use of ICT can positively enhance learner achievement. The teacher's use of technology is linked to the perceived usefulness and proficiency to bring about desired results (Good & Brophy, 1994; Lai, 2015; Pellerin, 2014). Teachers' positive perceptions of technology use are likely to influence teachers to fully exploit the potential of iPad and other related devices for teaching and learning as observed in T's classroom practices. T appeared confident at iPad use and the interactive whiteboard that he also used to

display illustrations for his lessons. It seemed that teacher disposition, therefore, was directly linked to learners' interest and motivation in learning. The next section describes dynamic assessment.

4.5.1.4 Dynamic Assessment

One of the reasons why learners are given an assessment is to determine if they can demonstrate their understanding in what they have been taught. In order to achieve a more functional assessment, Dynamic Assessment (DA) would be appropriate for both first and second language acquisition (Poehner & Lantolf, 2005). In line with the sociocultural theory applied in this study, DA fits well and has its roots in the work of Levy Vygotsky's work which emphasises the role of social interactions on cognitive development during language acquisition (Lantolf & Poehner, 2011; Poehner & Lantolf, 2005). Like many other academic terms, DA has diverse definitions and several applications within education and other disciplines. It is not the aim of this study to delve into these several definitions of DA. However, for the purposes of this study, DA is used to describe a deliberate infusion of interventions within assessment during the lesson and for monthly or term tests (Lidz, 1991). In other words, mediation is a part of the assessment process.

When assessment is seen as a means to promote learning, it is thus the means to enhance performance (Flórez & Sammons, 2013). It is common practice that technology assessment focuses on word processor skills and how to search the internet. For example, whether or not learners can type on the iPad and use it to search the internet is misunderstood as the only form of assessment when teachers integrate ICTs into their subjects (Goodwin, 2012). DA which could be associated with ICTs in education (i.e. iPads in this study), appears to help the teacher to stimulate learners' responsiveness to the literacy interventions, as opposed to what the learner already knows (Ndlovu & Lawrence, 2012). Ideally, assessment in this regard, should be able to go beyond basic word processing and internet search skills to include learners using technology as more than a tool to respond, create and understand how multimedia texts work in their social environment (Meurant, 2010).

It appears that at K school, progress was made with regard to integrating iPads in teaching and learning across subjects, e.g. iPads were used as content delivery tools (Barbour, 2012). As cultural artefacts for language mediation, T appeared not to have spent time to design lessons that engaged learners to manipulate and reconstruct visual texts into creative piece of writing (Godwin-jones, 2011). I do not suggest that T was not creative, but he probably

needed a variety of lessons, as CAPS prescribes, to modify them and make them tasks for creative writing. CAPS describes writing as a powerful tool because it enables learners to use their thinking and ideas to construct and communicate the ideas logically (Department of Basic Education, 2011). The process of creative writing that is similar to the process of scaffolding is also suggested (p.11).

T's activities mostly focused on using iPads to merely answer questions, and that is equivalent to using iPad for content delivery purposes. As earlier discussed, the sociocultural perspective of language acquisition is about assisting learners with meaningful quality language mediation through other physical cultural artefacts such as iPads to enable learners attain SRL (Lantolf, 2000). In other words, well integrated ICTs equip learners with 21st century skills such as responding to multimedia texts, as well as how these written and visual texts are designed (Godwin-jones, 2011). Learners should be able to use such texts for different purposes and audiences. Thus, being able to understand multimedia texts means understanding how they position the reader, how they assume authority, and what meaning and values such texts convey are crucial.

In all the observed lessons, the teacher gave an assessment which gauged what learners were taught at the end of each lesson. However, apart from the comments on the two learner's written blurbs and the word division exercise in class, no marked feedback was given in class. Learners used their iPads for assessment in class (Meurant, 2010). For example, the online comprehension assessment was done on the iPad and was submitted online for the teacher's feedback, but feedback was not immediate. In addition, an assessment of the online lesson on types of pronouns was given in class but the feedback was not immediate either. According to what learners were able to do on the iPad, it appeared that they had fewer difficulties in using an iPad for learning.

In all interviews with T, H and P, iPads were used to test learners where questions were recorded on the iPad and the learners had the opportunity to listen to, pause and replay them until they got to understand the questions. However, written examinations were not conducted through an iPad, but rather through a normal manual paper. In short, it appeared that T's teaching strategies were affected by the school's lack of ICT policy plan (Gülbahar, 2007; Tondeur, van Keer, van Braak & Valcke, 2008) which supported the use of iPads in formal examinations. In other words, K school lacked ICT-Based assessment especially in Home Language teaching and learning. The use of iPads could be successfully used to

provide quality mediated literacy skills and examination of the learner's action and mental processes (Bannayan, Kalaš, Conery, Laval, Laurillard, Lim, Musgrave, Semenov, & Turcsányi-Szabó, 2012). In assessment learners could use technology to take end of term tests, allowing them to search information for useful resources in order to answer questions (Miller, 2009). This practice could assist K school to determine the impact of iPad technology on learner performance, apart from classroom engagement and participation. Lantolf (2000) argues that assessment is not only about performance but where the performance lies when learners are with the "expert other". Thus, dynamic assessment is crucial as it can show what learners are able to do with levelled mediation.

4.5.1.5 Potential Barriers to ICT Integration

One of the challenges that the teacher expressed in this study was time constraints. A delay occurred when iPads were switched on and this consumed learning time. Distributing the iPad case from another class and trying to distribute the iPads to the learners also wasted time. In addition, the battery lifespan was another challenge. If the iPads where not charged when they were used by another class, that became a challenge, especially if there was load shedding. If there was no electricity, the interactive whiteboard could not be used for lesson displays too.

On the other hand, handling 28 learners was T's concern when he used iPads because he could not manage to give immediate feedback to learners. While this may not be generalised to other contexts, the teacher felt that a sizeable class was ideal in order to teach effectively with iPads. When a class is big, it becomes difficult to attend to learner's individual needs. The internet connection was yet another draw-back which inhibited full exploitation of iPad use in class. Sometimes the internet connectivity was extremely slow, sometimes there was no network at all, and that impacted on the learning time.

Moreover, the lack of school policy plan appeared to be one of the barriers as the school could not explain the impact technology had on teaching and learning. It is important that a school policy is in place as policies serve an important function of sustaining the vision and mission of an organisation. Policies provide the rationale, the goals and vision to guide any programme within the institution (Bakewell, 2008). In the case of an education system, a policy on the introduction and use of ICTs in the school provides guidance on how to measure the extent or impact of ICTs, otherwise it is difficult to explain the impact precisely. K school has not had any measure of the impact of the iPad on teaching and learning since its

introduction in 2013. This explains why it was difficult to tell whether the use of iPads had had any impact on literacy development, especially since the school was a former model C school with adequate resources and facilities. The three teachers I interviewed, (T, H and P) were in agreement that the use of iPads had to be given some time at least four years before its impact on teaching and learning could be determined.

Tondeur et al. (2008) highlight that the school policy plans are necessary for successful ICT integration in class. Lim (2007) recommends that schools could develop their own assessment standards. Similarly, other scholars recommend school-based plans to support teaching and learning (Gülbahar, 2007; Tondeur, van Keer, van Braak, & Valcke, 2008; Vanderlinde, & van Braak, 2011). Thus K school needed to develop a written school ICT policy plan as opposed to the verbal one. The policy could go beyond mere integration of technology or guarding against cyber security but also evaluate ICT integration in relation to teaching practices to enhance performance (Tondeur, et al., 2008).

4.6 Research Findings

The preceding discussion demonstrates that while ICT integration is not a smooth path, especially for the teacher, it is an educational benefit because it enhances teaching and learning. Once teachers realise the potential benefits of ICTs in teaching and learning as, iPads have the potential to unlock new and better ways of teaching and learning than before. This is consistent with Harris's remarks in his research conducted in primary schools regarding the use of ICTs in teaching and learning. According to Harris, if explored, ICTs such as iPads can open many new opportunities for instructional practices (Harris, 2002). They can be used as a tool for quality language mediation. Their potential to present texts in multiple forms was evident in the teacher's practices, although the analysed data shows that the use of iPads was not fully exploited in the Grade 6 English lessons. From the triangulated data presented and analysed above, the following findings emerged:

1. Teacher's Pedagogical Literacy Strategies
2. Few Learners' Writing Opportunities
3. Limited quality language mediated dialogue
4. Limited ICT-Based assessment on literacy
5. Teacher Motivation
6. Insufficient Training for Language Teachers
7. Access to Digital Technology

8. Tension between Curriculum Requirements and Teacher Literacy Practices

4.6.1 Teacher's Pedagogical Literacy Strategies

The study indicates that the teacher (T) used some literacy strategies to enhance literacy development such as vocabulary development, question and answer method and the use of decoding reading strategies. Although the study period was short to ascertain whether the learners' literacy skills were enhanced, the above-mentioned strategies are some of the effective ways to enhance literacy development (McNamara, 2012). Reading and writing are complex and daunting skills that require careful time investment in planning, on the part of the teacher. They involve processing letters, associating sounds, recognising words including abilities to process texts (Au, 1997). Understanding what one reads about also calls for understanding the complex stretches of sentences, and in turn understanding paragraphs of these connected words and sentences. This means that learners who are not exposed to such sophisticated skills during literacy practices are denied the chance to be critical readers. With this in mind, the teacher needs to use a number of reading strategies such as decoding, vocabulary, word knowledge, questioning and many others such as the communicative approach to literacy development mentioned in Chapter one (Au, 1997).

Decoding words is one of the most important and basic foundation for effective reading strategies because learners cannot understand texts if they cannot read the words. Decoding involves translating texts into speech by quickly matching letters to their sounds, including recognising pattern forming syllables and words (Adler, 2004; McNamara, 2012). Other reading strategies build on this foundation because learners who lack decoding skills have flaws in fluency, limited vocabulary as well as reading comprehension skills (Adler, 2004). In every lesson aimed at developing reading skills, it is important that teachers pay attention to explicit instruction on reading strategies to help learners become effective readers, increase their vocabulary and speed of reading with understanding so that learners can use these skills in future (McNamara, 2012).

Vocabulary was one of the literacy strategies T used during one of his lessons I observed. Vocabulary in language learning is important as it helps you understand and make sense of what you are talking or writing (McNamara, 2012). Thus building the vocabulary and word power or knowledge for yourself is especially important because it increases your chances to

enhance understanding as well as to be understood by others (Edge, 1993). As earlier mentioned, decoding a text or texts of new words may need skills of sound association strategies and formation of syllables (Adler, 2004; McNamara, 2012). The vocabulary and work knowledge strategy was evident in T's teaching of word division where learners used his iPad to form words and to break down words into syllables. Although some elements of complete explicit language teaching described earlier were lacking, the use of iPad not only made the lesson interesting but also mediated the mastery of syllables and word division. Explicit language teaching through meaningful tasks (Richards, 2010) is important as suggested in the Sociocultural Theory (SCT) through scaffolding and Zonal Proximal Development (ZPD) (Krashen, 1989; Lantolf & Poehner, 2008).

In T's lessons, it was noted that explicit teaching of reading and writing skills were not fully exploited. During T's comprehension texts, for example, learners were only introduced to the topic and what the story was about. T allowed learners to read and answer questions that followed. Features of the iPad such as recording sounds in T's class could have been used to support learners in reading. In a group interview with learners, learners were not sure if iPads enhanced their reading skills. Learners were right because they were not introduced to features of the iPad technology and how they could enhance reading skills to become sophisticated and effective readers (McNamara, 2012).

Apart from decoding, T used question and answer strategy to enable learners read and understand what he wanted them to know. Asking questions helped learners to understand what they were reading and what questions they could answer. Questioning is one of the teaching techniques that is aimed at giving cues or stimuli that enable learners access the content features to be learned, and instructions on what and how they are to do tasks (Cotton, 2001). T asked learners questions in order for the learners to get thinking about what answers they were going to give, only at the beginning of the lessons. For example, on the types of pronouns lesson, the question and answer technique enabled learners to get engaged in social conversations, thus providing opportunities for literacy mediation (Thompson, 2013). On the other hand, T did not provide questions and answers during the comprehension lesson (Lesson 2).

4.6.2 Few Learners' Literacy Writing Opportunities

Regarding plural literacy opportunities, the study found that there were limited writing

literacy opportunities given to the learners during the course of the study. During T's lesson presentations, the creative literacy writing technique was used. Similarly, T lacked a complete explicit teaching process of scaffolding writing skills in a blurb lesson presentation. According to the CAPS (Department of Basic Education, 2011), through writing and presenting, learners can acquire effective writing skills if the process approach is used. The process approach involves pre-writing or planning, drafting, revision, editing or proofreading and publishing or presenting. T's lesson on blurb writing was a catchy short paragraph aimed at advertising products, and was prepared on Explain Everything. Learners listened to the video and a few reinforced explanations were given before learners were told to write their own creative piece of blurb.

Writing as a complex process involves higher cognitive application (Knapp & Watkins, 2005), therefore, explicit instruction about the process is necessary before learners are asked to produce an independent piece of writing (Chaiklin, 2003). This may take several attempts before learners can produce a well organised piece of writing. The iPads were used as a writing and presentation tool for the few learners that completed their tasks in time. As mediational tools, iPads could have been used to present in the form of graphic or pictorial presentations, or any other visual or textual form such as a mind map of what learners could have written about before writing the actual blurb (Adler, 2004). The products of the learners' writing were submitted online for marking in readiness for feedback. In other words, several opportunities were necessary to engage learners in collaborative talk to discuss how they could make a road map for any piece of writing (Au, 1997; Department of Basic Education, 2011; Knapp & Watkins, 2005).

In line with literature reviewed, acquisition of literacy writing skills too depends on whether learners have comprehended the language input (Krashen, 1989), and the extent of learners' exposure to multiple opportunities of reading and writing (Lantolf, 2000; Goodman, 1996). Learners used the iPad to correct spelling mistakes. T could have exposed learners to online visual texts such as pictures in order to practice producing creative piece of writing by reading the pictures searched online via iPads. These pictures could have encouraged discussions among learners.

4.6.3 Limited Language Mediated Dialogue

Concerning language dialogue as mediation, the study indicates that there were limited creative tasks provided by the teacher to promote collaboration and a platform for language mediation through the iPad technology and social interactions by learners, as well as by the teacher or an expert other. As mentioned earlier, learners initiated collaboration by moving around with iPads to consult with other learners in the classroom. This seemed to suggest that the use of iPads had greater potential to create a collaborative atmosphere. Through the use of iPads, T had an opportunity to prepare task-based instruction around which learners could have been given a chance for communicative language skills (Martine Pellerin, 2014; Rodgers & Richards, 2014). The text-based approach uses texts and explicit explanation to literacy development. The task-based approach, on the other hand, uses tasks to engage learners in collaborative social interactions for literacy development (Rodgers & Richards, 2014). This is consistent with the sociocultural and constructivist theories informing this study which advocate for social interaction for language learning (Lantolf & Poehner, 2008; Lys, 2013; McLeod, 2009; Turuk, 2008).

According to the data presented, T explained that it was very difficult to use iPad creatively because of his heavy workload. Learners initiated collaboration while using iPads on tasks. Creating opportunities for dialogue to mediate literacy skills is one of the ways of classroom management (Oliver & Reschly, 2007) because learners would be engaged in talks with others, while correcting each other. Opportunities for dialogue purposes were not created for the learners which could have provided an opportunity for literacy development and intervention.

4.6.4 Limited ICT-Based assessment on literacy

On assessment, the study found that iPad supported assessment was limited as there were no ICT-Based assessment activities. Learners could have used the iPad as a literacy tool to draw sketches depicting what they would write about if they were guided (Beauchamp & Hillier, 2014).

In an interview with the principal it was explained that though the iPad was not fully used for assessments, it features sound recording, allowed them to record examination questions for assessment of learners who preferred taking examination through listening to recorded

examination questions. In T's classroom, learners submitted their tasks for marking online via Edmodo app but this had little impact on learners' literacy skills development. As a mediational tool, the iPad could have been used to assess learners' understanding of words, spelling, their speed to complete tasks with accurate answers, as well as other literacy related activities (Clarke, Svanaes & Zimmermann, 2013).

4.6.5 Teacher Motivation

From the analysis of data, the study found that teacher motivation was essential and linked to teacher's learner engagement with literacy practices. Motivation can be positive or negative. On the positive side, the teacher enjoyed engaging learners in literacy activities using technology. Timely support was an essential aspect for K primary school to maintain high levels of teacher motivation and interest (Norris, Hossain & Soloway, 2012) in the use of iPad for teaching and learning. In an interview with T, it was indicated that successful technology integration rested on the willingness of the teacher to embrace technology. In other words, technology could be anywhere, but still needed the teacher to use it. Similarly, the HOD had the same view that the success of iPad technology for literacy practices depended on the teacher's willingness, interest and the skill (Beggs, 2000) to use it for the benefit of equipping learners with the 21st century skills, critical skills.

For K primary school, management gave each teacher including T a personal iPad which they carried home in order to allow them prepare lessons from home. Thus teacher motivation was synonymous with assisting the teacher to acquire necessary digital skills that could enable them to deliver lessons confidently and skilfully. To boost teacher motivation, the school had an orientation programme to enable teachers to become more digitally fluent but this was not for subject specific expertise.

On the other hand, lack of motivation was associated with poor performance and lack of self confidence in the eyes of the net generation (Beggs, Director, Shields, Telfer & Bernard, 2012). P and H in separate interviews explained that the school endeavoured to motivate teachers through training because other than that, it was not going to be possible for them to integrate iPad technology in the school. They explained that they worked on boosting teachers confidence that they needed in the 21st century teaching.

4.6.6 Insufficient Teacher Training

While K school endeavoured to boost teacher motivation through training, the study indicates that there was insufficient teacher training in specific subject content such as English Home Language. It was also noted that Language teachers had no time to meet to support each other. Successful integration of technology for teaching and learning is dependent on the skills endowed on the teacher for specific purposes such as language teaching.

According to Hutchison, Beschorner & Schmidt-Crawford, (2012), it is important that teachers are helped to meet particular goals such as engaging learners with literacy activity practices through teacher training. From T's experiences, I noted that not every teacher in resourced schools had the ability to integrate technology in specific subjects, let alone specific topics. A lack of training, particularly in specific content subjects can lead to unclear application of technology for teaching and learning (Hutchison, et al., 2012, p. E16). T expressed such experiences in his English Home Language teaching, especially in certain topics such as grammar. These were evident in the manner that T used his literacy teaching strategies.

4.6.7 Access to Digital Technology

The study shows that owning digital resources and early familiarization to digital technology enabled learners to use iPads for literacy practices with less difficulties, and improved their spelling and vocabulary (Flewitt, Messer & Kucirkova, 2014; Wolf & Flewitt, 2010). This is consistent with the findings of Dr. Taylor Stephen on the impact of SES on learner achievement in school (Taylor, 2012). As the presented data indicates, the learners appeared comfortable using the iPad for literacy learning as they worked on their tasks individually and collaboratively. There was a timetable planned when T's class used iPads for English Home Language.

This is consistent with the literature review which shows that learners should be comfortable so that learning with technology is about learning through and not learning technology (Goodwin, 2012). Furthermore, it was noted that because the teacher and learners had full access to technology for teaching and learning (Gudmundsdottir, 2010, 2011; Hutchison, Beschorner & Schmidt-Crawford, 2012), iPad use for literacy learning was successfully integrated. It appeared that the use of iPad for literacy learning did not only support and

encourage learning but also motivated learner engagement, collaboration and individualised learning styles through its unique affordances such as accessibility and use of multiple fingers at once on the touch screen (Hartson, 2003). This is also consistent with the sociocultural and constructivist theories employed in this study which promote active learner involvement in authentic learning experiences (Lantolf, 2000).

In addition, as there was no use of traditional print textbooks used throughout my study, it was noted that access to the iPad technology gave the teacher a variety of opportunities to provide learners with authentic learning materials in real time and space required for the 21st century literacies (Hutchison, Beschorner & Schmidt-Crawford, 2012, p. 16). From the movements learners made in classroom, it was also found that the iPad supported learning in the classroom and at their homes (Hutchison, et al., 2012, p. 23). It was also noted that iPads did not transform teaching on their own, so their use as literacy development tools depended on how the teacher and the learners used them (Beauchamp & Hillier, 2014). It seemed that the adoption of iPad technology as individualised devices increased learners' access and use of technology to access multiple information online, as it was confirmed when I interviewed T, H and P.

4.6.8 Tension between Curriculum Requirements and Teacher Literacy Practices

The data shows that there was a mismatch between T's actual literacy strategies and the curriculum standards. The guidelines affect the use of technology for literacy development. The data indicates that lack of the guidelines for language teaching, as was the case with K primary school, made the teacher sceptical on how to approach certain topics in CAPS, using the iPad (Flewitt, Messer & Kucirkova, 2014). This was despite T's confidence about the use of iPads.

Lack of guidelines for technology integration could lead to failure in ICT integration. For example, during T's lesson presentations he expressed that there were certain things that could not be done with the iPad. In an interview with T, he particularly mentioned how he had not figured out how to teach grammar lessons on an iPad. To keep curriculum standards, T said that he searched the lessons from the internet with a focus on what he wanted to teach and something that spoke to the CAPS curriculum, although it was not always that he found similar topics for use in class. From the data, curriculum guidelines ought to focus on practical use of technology for literacy development (Holloway, Green & Livingstone, 2013).

Explicit instruction on literacy practices were blurred because T lacked guidelines on the use of technology. For example, online comprehension which is lesson number two, T did not provided explicit teaching procedures as is the case with text-based approach prescribed in CAPS (Department of Basic Education, 2011). As a comprehension reading strategy, CAPS suggests that learners are engaged in pre-readings, reading, and post reading stages (pp.10-11). The strategies enable learners to become effective readers and critical thinkers. Pre-reading basically connects the learners to their Everyday Knowledge (EK) or prior knowledge as described in the literature review and consistent with the sociocultural and constructivist theories employed in this study. According to Rodgers, & Richards (2014), explicit teaching techniques are highly effective for literacy development as a reading strategy for comprehension. According to them, explicit teaching requires plain explanations coupled with the teacher modelling texts, guided practice and the application.

T used part of the procedures above to explain what the story line was about briefly and straight away allowed learners to answer the comprehension questions that followed before submitting answers using learners iPads. T's explanations captured only the first stage, connecting learners to EK. There was little scaffolding through different texts how learners could pay particular attention to particular parts of texts for understanding (Adler, 2004). Consistent with the literature review, reading strategies can assist learners to develop metacognitive skills as they use technology (Hartson, 2003) because this helps learners to think about and be in full control of their reading. This however was not the case with T's comprehension exercise.

T's literacy practices falls below the effective ways of literacy teaching because the acquisition of literacy depends on whether learner's language input (Krashen, 1989) is adequately understood. This lack of explicit teaching to scaffold reading extended to creative writing skills one of the literacy development techniques T employed.

4.7 Conclusion

This study provided a case study presentation of the use of iPads in a primary school setup. From what has been presented and discussed in this chapter, it is apparent that technology in the 21st century classroom is a matter of urgency. In order for learners to compete favourably

with others and function fully in current society, learners must be equipped with 21st century skills by using emerging technologies.

The study has shown that teaching with technology such as the iPad, requires teachers' immense exposure and motivation to use emerging technologies. In addition, iPads provide great opportunities for literacy learning as long as the teacher is well equipped to integrate technology into his or her classroom practices. Furthermore, the participants indicated that teaching and learning with iPad technology was easier because of its features and design that made it a useful device for learning. Because of the size and portability of an iPad and absence of peripheral accessories, it enabled users to carry it around the classroom and in the school, even if in this case the iPad was not used in a mobile teaching and learning fashion. The learners were always enthusiastic to use the iPad for learning and literally hardly waited for instruction except that they were not exposed to numerous opportunities.

Generally, learners adopted the technology so much that learning appeared fun and rewarding through iPads. It is apparent that the device can be used to support learners through collaboration, engagement, in groups or as individuals. This, however, requires that the teacher pay careful attention in order to prevent learners to be distracted when they are working on any task. Good learning environment, facilitation and management make the iPad adoption in the school successful

4.8 Chapter summary

In this chapter, data was presented, analysed and discussed to draw preliminary findings. The findings show that specific subject teacher support, School ICT policy plan are important for successful technology integration in the teaching and learning in general. Furthermore, it was clear that SES was one determinant of the rate at which the learner acquires literacy skills. Pertinent issues such as the need for teachers to draw on the learners' SCT to teach literacy skills with quality mediated language dialogues could not be overemphasised. In addition, the need for teachers to use ZPD and scaffolding in a meaningful ways was stressed because it provided an opportunity for teachers to predict where the learners stood in terms of literacy learning and what could be done to facilitate interventions. ZPD meant that teachers needed to apply explicit teaching strategies in order to expose learners to most features of any form of text in order to enhance their reading and writing skills acquisition. It was stressed that building learners reading and writing strategies through explicit instruction was a foundation for future complex texts. While the teacher made use of ICT to teach English language

aspects, his teaching strategies did not seem to fully challenge learners' higher order thinking skills. The following chapter provides the conclusion and recommendations to the study.

CHAPTER 5: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter gives a summary of the study I conducted. I include in this summary a brief overview of the purpose of the study, restate the research questions, the methodology used, as well as a summary of the results, conclusions and a brief discussion. Finally, I make recommendations for further potential research.

5.2 Purpose of the Study and Research Method

The main purpose of the study was to investigate the integration of Information and Communication Technologies (ICTs) in Grade six English home language (HL) at a primary school in the Western Cape. The study was guided by five questions whose main question was 'how do teachers use ICTs in English home language lessons in the intermediate phase?'. The research questions were;

1. What strategies do Grade six teachers use to enhance learners literacy skills through the use of ICTs?
2. What are the guidelines of the current language curriculum with regard to ICT integration and literacy development?
3. What support is available to Grade six teachers and learners to utilize ICTs for language and literacy development?
4. What are the teachers' perceptions and experiences of ICTs in English Home Language literacy lessons?
5. What lessons, if any, could be learnt from the use of ICTs for literacy development in well-resourced schools?

The study successfully used the qualitative research methodology (QRM) and case study as a design for data collection. The research was descriptive and interpretive in nature. Classroom observations and interviews were the main instruments used for data collection. The collected data typically represents the perceptions of the participants under the study regarding ICT's integration into English Home Language. Regarding interviews, the respondents, who included a focus group of six selected learners, the teacher, Head of Department and the principal, responded to a set of questions prepared in advance addressing the aim of the study as stated above in 5.1. The non-probability subjective sampling technique used for 'identification and selection of information-rich cases' as Palinkas, Horwitz, Green, Wisdom, Duan, & Hoagwood (2013, p. 533) postulate, was especially used to choose the research site.

The research site was particularly selected because it was suitable for investigating the use of ICTs as a phenomenon of interest in this study.

5.3 Summary of Findings

The study indicates several results from the research that have successfully answered the research questions of interest in the study. The research shows that, K primary school had successfully integrated the use of ICTs and is in the process of standardising the practice of using iPads. In this regard, teaching strategies play a major role in facilitating literacy skills development, as well as adequate mediated language dialogues which in this case were not fully used.

The results also indicated that iPad technology was a potential tool for assessment. However, the digital gadget was not fully exploited to assess the literacy skills of learners. Insufficient subject specific teacher training affected literacy delivery skills, and so blurred effective literacy instruction in line with CAPS. Finally, the socioeconomic background of learners had a bearing on either access to technology for literacy development or not.

5.4 Discussion of Findings

K school seemed to have successfully integrated the use of technology in teaching and learning, however, the Grade six intermediate teacher needed further subject based training for him to feel comfortable to teach any topic in the syllabus without problems. In the interviews with the Head of Department and the Principal, both indicated that challenges experienced were at an individual level. This is an indication that as a school, they were doing everything possible to ensure that the school fully integrated iPad technology in teaching and learning.

According to the results, the socioeconomic status (SES) of the learners has an influence on learners' literacy skills. Almost all the learners had good access to iPad technology, and that facilitated their learning to use iPads in learning. It appeared that those learners who had access to ICT at home learned faster than those who did not have access to technology at home.

The language teachers needed to create a forum that would enable them to discuss matters relating to language and literacy best practices with iPad technology. Furthermore, K school needed a school policy plan to help them guide the integration of iPads in the school. This

was an institutional barrier to ICT integration. With the teacher, the challenges had to do with the class size, internet speed and lack of certain digital related skills to develop lessons for iPad use and to realise its impact on literacy development.

While there were challenges, it was apparent too that technology integration was close to normalization (Bax, 2003). In other words, teaching in K school is heading towards a situation where teachers will no longer be able to do without technology. In addition, it appeared that the iPad created tangible opportunities for personalised engagement and collaboration.

Personalised engagement was necessary because individual people or learners were unique with differentiated aptitudes. Any teaching and learning, therefore, must acknowledge the differences of learners and assist them to achieve learning goals at their pace. Using the unique iPad technology features such as a portable device, an iPad could be a personal partner in supporting individual learners in learning. This could be helpful when the iPad was populated with relevant literacy apps to support learning differences. T, during his lessons, was able to assist learners with individual tasks from time to time if they needed help.

Each learner had an iPad and so learning was more at an individual level. Mostly learners received instructions on most of the tasks, and then were left to use the iPad to work on the tasks. Higher order thinking skills, in this case, may or may not be fostered, depending on the kind of activities given to the learner. For example, if the task was about comprehension learners would be instructed to go online and search a specific website to find a comprehension task and then follow the comprehension instruction to answer the task.

If used properly, the iPad can be a personalised engagement tool (Burden, Hopkins, Male, Martin & Trala, 2012) which goes beyond merely answering online questions and which can enhance higher order thinking skills. Similarly, Henderson & Yeow (2012), in research done at New Zealand primary schools, report that an iPad provides a smooth environment for learning in any context, either formal or informal.

As the findings further indicate, the seamless environment supported through iPads can only be meaningful and hassle free if the teacher attended specific subject continuous training on the use of technology, which was deemed a crucial aspect for successful integration. I advance that since technology is ever changing and so should the teacher's digital skills be.

As results suggest from K primary school, the iPad will be seen not only as a content delivery tool, but as a tool through which meaningful and critical thinking skills are nurtured.

Furthermore, the results indicate that teachers did not hold meetings with regard to their specific subjects for peer teaching and challenge discussion. As one of the findings, the lack of specific subject training among teachers could have been complemented by peer teacher meetings face to face or virtual. Such platforms, if encouraged and planned for the way co-curricular activities are perfectly planned for in the school, would lead to improved pedagogical practices. Teachers could meet regularly to discuss common notes and how to use technology such as the iPad to deliver lessons. For example, educational apps which the teacher suggested to his class could be used as a platform to foster higher order cognitive development (Goodwin, 2012). Educational apps are especially important for teachers, but technical skills through exposure to modern technology and pedagogy practice are crucial for teachers.

Collaboration, on the other hand, as one of the strategies which could have been used more effectively, is one of the benefits of the iPad apart from engaged personalization. Deeply ingrained in the theories of Vygotsky, collaboration is a learning approach which believes that meaningful learning could be achieved through group based learning (McLeod, 2007). Vygotsky believed that learning, with the support of the expert others in a social natural context (Chaiklin, 2003), closes the knowledge deficit gap. The gap is what learners are not able to do on their own. With the help of others this is also known as the "more knowledgeable other" (MKO). The gap is the Zone of Proximal Development (ZPD). Explicit teaching coupled with other reading and writing strategies such as decoding could have been more useful in T's class had he used their processes.

5.5 Implications for Literacy teaching and learning

From the findings above, iPad technology has several implications for teaching and learning. Based on the findings, the teacher's attitude, motivation, perceived perceptions about the benefits and exposure to digital skills, plays an exceedingly important role to make sure iPad use yields the desired benefits. It is also clear from the study that the teacher's pedagogical approaches implemented in the classroom are critical to the successful use of iPad technology. No matter how useful iPad's affordances are, the teacher's sound instructional practices and strategies are crucial for the iPad's successful use in the classroom.

Regarding peer teaching and common note discussions, teachers, in their specific subject domains, need to create time to share and discuss the best practices in literacy development, using iPad technology in class. These discussions may not only be face-to-face but on platforms such as group social media, chatrooms or any other means that is cost effective, in terms of time or financially.

On the other hand, it is apparent from the findings that iPad technology in itself cannot replace the role of the teacher in class. The potential efficacy of an iPad, therefore, should be rooted in the teacher's ingenious creation of tasks that promote engagement and collaboration while learners make use of the flexible iPad affordances (Hartson, 2003; Klein & Knitzer, 2006). Because of the seemingly heavy workload as indicated by the teacher (T), it appears there is not enough time for the teacher to engage learners with critical skills in ICT led lessons. Teachers ought to expose learners to critical and visual literacy skills through explicit instructional practices because iPads and other related touch screen devices are predominantly saturated with visual images. These skills would enable the learners to learn how to discern any information misrepresentation that may conflict with what they already know, because they need to process graphic information (Prensky, 2001 a) before any print text.

5.6 Concluding Remarks

The study results show that there is a link between the teacher's teaching strategies and learners' literacy abilities. Furthermore, the results show that there exists a link between multiple literacy opportunities and enhanced learner's literacy acquisition. In other words, the more the learners are exposed to literacy writing practices, the more they acquire literacy skills.

In addition, there is a correlation also between exposing learners to quality language mediated dialogues and their quality acquisition of language skills. That is to say, learners who are exposed to quality language dialogues are more likely to enhance their language skills more than learners who are not. ICT-based literacy assessment also indicates a connection for improved literacy development.

From the results, a connection between teacher motivation and improved literacy delivery efficacy was evident (Kyanka-Maggart, 2013). Motivated teachers are more likely to work

harder to prove their worth. This is also true to teacher training. There is a connection between teacher adequate exposure to technology with their ability to effective literacy instruction. In addition, access to technology shows that there is a co-correlation between the learner's socioeconomic status and the learners access to technology (American Psychological Association, 2009; Taylor, 2012).

While the findings of this study cannot be generalized because of its small scale, it can be deduced that ICT use either in well-resourced or in under resourced schools is still a challenge with regard to its use for teaching and learning. The challenge is associated with lack of specific subject teacher training to fully use technology for literacy instruction. The study has shown that school management is concerned with teacher training in the general knowledge of technology. The findings resonate with other research findings that high literacy performance in well- resourced school has a direct link to the learners' SES.

5.8 Recommendations

a) Teacher in-service training or continuous professional development on the use of technology is necessary for effective ICT integration in teaching and learning, especially in individual content subjects. This would reduce the chances of using the iPad as a content delivery tool only.

b) Teachers need specific subject platforms and training where they can share and be oriented with best practices of literacy development with each other. Regular meetings could be a good platform for them to share ideas and improve on how to use iPads for teaching certain language aspects.

c) Clear School policy guideline plan could be developed to help teachers evaluate the integration of technology practices and later improvements.

d) The impact of the iPad literacy development is a long-term achievement over a period of at least four years. There is a need to conduct a longitudinal study to determine the impact of iPad on literacy development in the Intermediate Phase.

References

(ACARA), A. C. A. R. A. (n.d.). The Australian Curriculum. Retrieved May 5, 2015, from www.australiancurriculum.edu.au/English/

Açısı, Ö. Ö. S. B. B. (2011). Self-regulated learning from a sociocultural perspective. *Education*, *36*, 160.

Adams, M. (1993). *Beginning to read: Thinking and learning about print.* Cambridge, MA: MIT Press.

Adler, C. R. (2004). Seven strategies to teach students text comprehension. *Reading Rockets*, *3479*, 1–5.

Alexandersson, M. & Linderoth, J. & Lindö, R. (2001). *Bland barn och datorer. Lärandets villkor i mötet med nya medier.* Lund: Studentlitteratur.

Altheide, D. L., & Johnson, J. M. (1994). *Criteria for assessing interpretive validity in qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), Handbook of qualitative research (pp. 485-499)*. Thousand Oaks, CA: Sage Publications.

Al-Zaidiyeen, N.J., Mei, L.L., Fook, F. S. (2010). Teachers' Attitudes and Levels of Technology Use in Classrooms: The Case of Jordan Schools. *International Educational Studies*, *3*(2), 211–218.

American Psychological Association. (2009). Education and Socioeconomic Status. *American Psychological Association*. doi:10.4135/9781412971959.n355

Anderson, C. (2010). Presenting and evaluating qualitative research. . *American Journal of Pharmaceutical Education*, *74*(8).

Anderson, J. (2010). *ICT Transforming Education: A Regional Guide*. Bangkok: UNESCO.

Anderson, T. (2004). *Towards a theory of online learning. In Anderson, T. & Elloumni, F. (Eds), Theory and practice of online learning (pp. 33 -60).* Athabasca, AB: Athabasca University Press. Retrieved from Retrieved from http://cde.athabascau.ca/online_book/ch2.html

Angrosino, M. V. & Mays de Pérez, K. A. (2000). Rethinking observation: From method to context. *Handbook of Qualitative Research*, *2*, 673–702.

Anstey, M., & Bull, G. (2010). Helping teachers to explore multimodal texts. *Curriculum & Leadership Journal*, *8*(16).

Appleton, J. V. & Cowley, S. (1997). Analysing clinical practice guidelines. A method of documentary analysis. . *Journal of Advanced Nursing*, *25*(5), 1008–1017.

Atkins, L. & Wallace, S. (2012). *Qualitative Research in Education*. London: Sage Publications.

Atkinson, P. A. & Coffey, A. (2004). *Analysing documentary realities. In D. Silverman Qualitative research: Theory, method and practice* (2nd ed.). London: Sage Publications.

Au, K. (1997). *A sociocultural model of reading instruction: the Kamehameha Elementary Education Program. In S. A. Stahl. & D. A. Hayes (eds.), Instructional models in reading*. Mahwah, New Jersey: Lawrence Erlbaum Associates Inc Publishers.

Aufderheide, P. & Firestone, C. M. (1993). *Media literacy: a report of the national leadership conference on media literacy*. Washington DC: Aspen Institute.

Austin, A., Coates, J., Donnelly, H., Fitzgerald, B., Black, P., Pappalardo, K., … Carroll, E. (2009). *Blog, Podcast, Vodcast and Wiki Copyright Guide for Australia*. Australia: Queensland University of Technology.

B.B.C News. (2014, July 8). South Africa education gets e-learning digital makeover. *B.B.C*. Cape Town. Retrieved from http://www.bbc.com/news/business-28191371

Bailey, K. D. (2008). *Methods of Social Research* (4th ed.). New York: Simon & Schuster Inc. Retrieved from http://books.google.co.za/books?id=NT8eiiYhIpoC&printsec=frontcover&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false

Bakewell, O. (2008). Research beyond the categories: The importance of policy irrelevant research into forced migration. *Journal of Refugee Studies*, *21*(4), 432–453.

Bakhtin, M. M. (1981). *The Dialogic Imagination: Four Essays. Ed. Michael Holquist. Trans. Caryl Emerson and Michael Holquist.* London: University of Texas Press.

Ball, A. F., & Freedman, S. W. (2004). *Bakhtinian Perspectives on Language , Literacy , and Learning Edited by*. UK: Cambridge University Press.

Bannayan, H.E., Kalaš, I., Conery, L., Laval, E., Laurillard, D., Lim, C.P., Musgrave, S., Semenov, A., & Turcsányi-Szabó, M. (2012). ICT in Primary Education. *UNESCO Institute for Information Technologies in Education*, *1*, 1–136. Retrieved from iite.unesco.org/pics/publications/en/files/3214707.pdf?

Barad, K. (2008). "Intra-actions" (Interview of Karen Barad by Adam Kleinmann). *academia.edu*. Retrieved June 30, 2015, from https://www.academia.edu/1857617/_Intra-actions_Interview_of_Karen_Barad_by_Adam_Kleinmann_

Barad, K. (2012). "On Touching – The Inhuman that Therefore I Am." Differences: 206-223. *A Journal of Feminist Cultural Studies*, *23*(3).

Barbour, M. K. (2012). Teachers' Perceptions of iPads in the Classroom.

Barton, D., & Hamilton, M. (2000). *Literacy practices. In D. Barton, M. Hamilton, & R. Ivanic (Eds.), Situated literacies: Reading and writing in context (pp. 7-15).* New York: Routledge.

Bax, S. (2003). CALL – past, present and future. *System*, *31*, 13–28.

Baylor, A. L., & Ritchie, D. (2002). What Factors Facilitate Teacher Skill, Teacher Morale, and perceived Student Learning In Technology-Using Classrooms? *Computers and Education*, *39*(4), 395–414.

Beauchamp, G., & Hillier, E. (2014). An Evaluation of iPad Implementation Across A Network of Primary Schools in Cardiff.

Beggs, T. A. (2000). Influences and Barriers to the Adoption of Instructional Technology. *Beggs*. Retrieved from Retrieved from http://www.mtsu.edu/~itconf/proceed00/beggs/

Beggs, P., Director, P. D. R. D. S., Shields, C., Telfer, S., & Bernard, J. L. (2012). *A shifting landscape: Pedagogy, technology, and the new terrain of innovation in a digital world*. Canada. Retrieved from http://csc.immix.ca/files/251/1349272509/A_Shifting_Landscape_October_2,_2012.pdf

Bell, J. (1999). *Doing your Research Project: A Guide for first time Researchers in education and Social Science* (3rd ed.). Philadephia: Open University Press.

Bell, B., & Cowie, B. (2001). The characteristics of formative assessment in science education. *Science Education*, *85*(5), 536–553.

Benson, P. (2007). Autonomy in language teaching and learning. *Language Teaching: Journals.cambridge.org*, *40*(1), 21–40.

Bezemer, J. & Mavers, D. (2011). "Multimodal transcription as academic practice: a social semiotic perspective",. *International Journal of Social Research Methodology*, *14*(3), 191 — 206.

Bjerede, M., Atkins, K., & Dede, C. (2010). Ubiquitous mobile technologies and the transformation of schooling. . *Educational Technology*, *50*(2), 3–7.

Blackwell, C. (2013). Teacher practices with mobile technology: integrating tablet computers into the early childhood classroom. *Journal of Education Research*, *7*(4), 1–25.

Blackwell, C. (2014). Teacher practices with mobile technology: integrating tablet computers into the early childhood classroom. *Journal of Education Research*, *7*(4), 1–25.

Bock, M. & Pacchler, N. (2013). *Multimodality and Social Semiosis: Communication, Meaning-Making, and Learning in the Work of Gunther Kress*. New York: Routledge.

Boeiji, H. (2010). *Analysis in Qualitative Research.* London: SAGE Publication.

Boroditsky, L. (2011). How language shapes thought. *Scientific American*, *304*(2), 62–65.

Bowen, G. A. (2009). "Document Analysis as a Qualitative Research Method." *Qualitative Research Journal*, *9*(2), 27 – 40.

Bransford, J.D., Brown, A.L., & Cocking, R. R. (2000). *how people learn: Brain, Mind, Experience, and School: Expanded Eddition.* Washington DC: National Academies Press.

Briner, M. (1999). Briner, M 1999. Learning theories - constructivism. Retrieved from http://curriculum.calstatela.edu/faculty/psparks/theorists/501const.htm.

Brink, P. J., & Wood, M. J. (1997). *Advanced design in nursing research.* Sage Publications.

Bruner, J. (1966). *Toward a Theory of Instruction.* Cambridge, MA: Harvard University Press.

Bruner, J. (1986). *Actual Minds, Possible Worlds*. Cambridge, MA: Harvard University Press.

Bruner, J. (1990). *Acts of Meaning*. Cambridge, MA: Harvard University Press.

Brysman, H., & Burgess, R. (1999). *Qualitative research methodology: A review.* London: Routledge.

Bullock, D. (2004). Moving from Theory to Practice: An Examination of the Factors that Preservice Teachers Encounter as They Attempt to Gain Experience Teaching with Technology During Field Placement Experiences. *Journal of Technology and Teacher Education*, *12*, 211–237.

Burden, K., Hopkins, P., Male, T., Martin, S. and Trala, C. (2012). *iPad research in schools*. Hull: University of Hull.

Burns, N & Grove, S. (2001). *The practice of nursing research: conduct, critique and utilization.* (4th ed.). Philadephia: WB Saunders.

Camp, W. G., & Doolittle, P. E. (1999). Constructivism: The career and technical education perspective. *Journal of Vocational and Technical Education*, *16*(1).

Çetin, Y., & Flamand, L. (2013). Posters, self-directed learning, and L2 vocabulary acquisition. *ELT Journal*, *67*(1), 52–61.

Chaiklin, S. (2003). The zone of proximal development in Vygotsky's analysis of learning and instruction. *Vygotsky's Educational Theory in Cultural Context*, *1*, 39–64.

Chen, X.-B. (2013). Tablets for Informal Language Learning: Student Usage and Attitudes. *Language Learning & Technology*, *17*(1), 20–36.

Chiu, M. M., & Chow, B. W. Y. (2015). Classmate characteristics and student achievement in 33 countries: Classmates' past achievement, family socioeconomic status, educational resources, and attitudes toward reading. *Journal of Educational Psychology*, *107*(1), 152.

Cisco Systems Inc. (2008). Multimodal learning through media: What the research says. Retrieved June 18, 2015, from

http://www.cisco.com/web/strategy/docs/education/Multmodal-Learning-through-Media.pdf

Clark, W., & Luckin, R. (2013). iPads in the Classroom. What The Research Says. Retrieved August 17, 2015, from http//www.lkldev.ioe.ac.uk/lklinnovation/wp-content/uploads/2013/01/2013-iPads-in-the-Classroom-v2.pdf

Clarke, B., & Svanaes, S. (2014). An Updated Literature Review on the Use of Tablets in Education, (April).

Clarke, B., Svanaes, S., & Zimmermann, S. (2013). One-to-one tablets in secondary schools: an evaluation study. *Tablets for Schools.*

Clements, D. H. (2002). Computers in early childhood mathematics. *Contemporary Issues in Early Childhood*, *3*(2), 160–180.

Coders, F. (2013). INSIDE ATLAS . ti – The QDA Newsletter. *Read*, 1–9. Retrieved from file:///C:/Users/KELVIN/Documents/Masters Thesis 2015/ATLASti_Newsletter_2013-02.pdf

Cole, M. (1990). *Cognitive development and formal schooling: The evidence from crosscultural research. In Moll, L.C (Ed.), Vygotsky and Education.* Cambridge: Cambridge University Press.

Cole, M. (1995). Culture and cognitive development: From cross-cultural research to creating systems of cultural mediation. *Culture and Psychology*, *1*(1), 25–54.

Cooke, M. & Roberts, C. (2007). *ESOL. Developing adult teaching and learning: practitioner guides.* London.

Copple, C., & Bredekamp, S. (2009). *Developmentally appropriate practice in early childhood programs*. Washington DC: National Association for the Education of Young Children.

Corbin, J. & Strauss, A. (2008). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (3rd ed.). Thousand Oaks, CA: Sage Publications.

Cotton, K. (2001). Classroom questioning. School improvement research series, 3. Retrieved November 24, 2015, from http://www.learner.org/workshops/socialstudies/pdf/session6/6.ClassroomQuestioning.pdf

Coughlan, S. (2014). Tablet computers in "70% of schools." *British Broadcasting Corperation News, Education Correspondence*. Retrieved June 15, 2015, from http://www.bbc.com/news/education-30216408

Couse, L. J., & Chen, D. W. (2010). A tablet computer for young children? Exploring its viability for early childhood education. *Journal of Research on Technology in Education*, *43*(1), 75–96.

Coward, C., Caicedo, S., Rauch, H., & Vega, N. R. (2014). Digital opportunities : Innovative ICT solutions for youth employment. *International Telecommunication Union -Youth Report*.

Cox, M. (1997). *The effects of Information Technology on students' motivation*. Coventry: NCET and Kings College.

Cox, M., Webb, M., Abbott, C., Blakely, B., Beauchamp, T. & Rhodes, V. (2003). *ICT and pedagogy: A review of the research literature*. London New York: DfES and Becta.

Coyne, I. T. (1997). Sampling in qualitative research. Purposeful and theoretical sampling; merging or clear boundaries?. *Journal of Advanced Nursing*, *26*(3), 623–630.

Creswell, J. W., Klassen, A. C., Plano Clark, V. L., & Smith, K. C. (2011). Best practices for mixed methods research in the health sciences. *Bethesda (Maryland): National Institutes of Health, 2094-2103.*

Cutcliffe, J. R. (2000). Methodological issues in grounded theory. *J Adv Nurs*, *31*(6), 1476–1484.

Cviko, A., McKenney, S., & Voogt, J. (2015). *Exploring Teacher Roles and Pupil Outcomes in Technology-Rich Early Literacy Learning. In Educational Media and Technology Yearbook*. Switzerland: Springer International Publishing.

Daley, E. (2003). Expanding the concept of literacy. *EDUCAUSE Review*, *38*(2), 32–40.

Danesi, M. (2004). *Messages, Signs and Meanings: A Basic Textbook in Semiotics and Communication* (3rd ed.). Toronto, Ontario: Canadian Scholars Press.

Dawson, S., Heathcote, L., & Poole, G. (2010). Harnessing ICT potential: The adoption and analysis of ICT systems for enhancing the student learning experience. *International Journal of Educational Management*, *24*(2), 116–128.

Deaney, R., Ruthven, K. & Hennessy, S. (2003). Pupil Perspectives on the Contribution of Information and Communication Technology to Teaching and Learning in the Secondary School. *Research Papers in Education*, *18*(2), 141–165.

Denscombe, M. (2003). *Ground Rules for Good Research: A 10 Point Guide for Social Researchers.* Philadelphia: Open University Press.

Denzin, N.K., & Lincoln, Y. S. (2000). *Introduction: "The discipline and practice of qualitative research" in Denzin, N.K. & Lincoln, Y.S. (ed) Handbook of Qualitative Research, 2nd ed.,*. London: Sage Publications.

Denzin, N.K., & Lincoln, Y. S. (2008). *Strategies of Qualitative Research*. London: Sage Publications.

Department of Basic Education. (2011). *National Curriculum Statement (NCS): Curriculum and Assessment Policy Statement, English Home Language Intermediate Phase Grades 4-6*. Pretoria, South Africa: Department of Basic Education.

Department of Basic Education. (2014). *Report on the Annual National Assessment of 2014 Grades 1 to 6 & 9*. Pretoria: Department of Basic Education.

Department of Education. Government Gazette. (2004). *White Paper on e-Education: Transforming Learning and Teaching Through Information and Communication Technologies (ICTs).* Pretoria.

DiCicco-Bloom, B. & Crabtree, B. F. (2006). "The qualitative research interview." *Medical Education*, *40*, 314–321.

DiCicco-Bloom, B., & Crabtree, B. F. (2006). The qualitative research interview. *Medical Education*, *40*(4), 314–321.

Diener, E. & Craendall, R. (1978). *Ethics in social and behavioral research*. Chicago: University of Chicago Press.

Dobler, E. (2012). Using iPads to promote literacy in the primary grades. . *Reading Today*, *29*, 18–19.

Durrheim, K. (2006). *Research in practice: Applied methods for the social sciences*. Cape Town: Juta and Company Ltd.

Dwyer, J. (2007). Computer-based learning in a primary school: Difference between the early and later years of primary schooling. *Asia-Pacific Journal of Teacher Education*, *35*(1), 89–103.

Edge, J. (1993). *Essentials of English Language Teaching*. (N. Grant, Ed.). New York: Longman Press.

Edison, T., & Franklin, B. (2012). Kinesthetic Learning in the Classroom: Great ideas originate in the muscles, 1–9.

Educause. (2011). "7 things you should know about iPad apps for learning." *Learning Initiatives*. Retrieved May 14, 2015, from http://www.southernwv.edu/files/iPad Apps for Learning_0.pdf

Eisner, E. W. (1991). *The enlightened eye: Qualitative inquiry and the enhancement of educational practice*. Toronto, Canada: Collier Macmillan.

eNews Channel Africa. (2013). Tablets to improve education. *eNCA*. Retrieved March 14, 2015, from https://www.enca.com/south-africa/technology-education

Ertmer, P. A. (1999). Addressing first- and second-order barriers to change: Strategies for technology integration. *Educational Technology Research and Development*, *47*(4), 47–61.

Ertmer, P. A., & Ottenbreit-Leftwich, A. T. (2010). Teacher technology change: How knowledge, confidence, beliefs, and culture intersect. *Journal of Research on Technology in Education*, *42*(3), 255–284.

ESCAP, E. and S. C. for A. and the P. (2001). "Are ICT Policies Addressing Gender Equality?" Retrieved June 12, 2015, from http://www.unescap.org/wid/04widresources/11widactivities/01ictegm/backgroundpaper.pdf.

Facer, K., Furlong, J., Furlong, R., & Sutherland, R. (2003). *ScreenPlay: Children and Computing in the Home*. London: Routledge Falmer.

Fele, G. (2012). The use of video to document tacit participation in an emergency operations centre. . *Qualitative Research*, *12*(3), 280–303.

Fitzgerald, R. (2005). Understanding informal learning with technology: Insights for ICT integration. Paper presented at the Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2005. Chesapeake, VA.: Green, H & Hannon,.

Flewitt, R., Messer, D., & Kucirkova, N. (2014). New directions for early literacy in a digital age: the iPad. *Journal of Early Childhood Literacy*, *0*(0), 1–22.

Flórez, M. T., & Sammons, P. (2013). *Assessment for Learning: Effects and Impact*. England: . CfBT Education Trust. 60 Queens Road, Reading, RG1 4BS.

Fluck, A. (2001). The rise and rise of computers in education. *Children's Ways of Knowing: Learning Through Experience*, 144–157.

Flynn, P., Mesibov, D., & Vermette, P. (2013). *Applying Standards-Based Constructivism: Elementary.* Routledge.

Francis, B., Robson, J. & Read, B. (2001). An Analysis of Undergraduate Writing Styles in the Context of Gender and Achievement. *Studies in Higher Education*, *26*(3), 313–326.

Freire, P. (1974). *Education for Critical Consciousness*. UK: Bloomsbury Publishing Plc.

Frosh, S. & Emerson, P. D. (2005). "Interpretation and Over-Interpretation: Disputing the Meaning of Texts." *Qualitative Research*, *5*(3), 307–324.

Gaborone, B. (2006). The use of documentary research methods in social research. *African Sociological Review*, *10*(1), 221–230.

Gall, M.D., Gall, P.J. & Borg, W. R. (2007). *Educational research: An introduction.* (8th ed.). White Plains, NY: Pearson.

Garcez, A., Duarte, R. & Eisenberg, Z. (2011). Production and analysis of video recordings in qualitative research. [Online,. *Educ. Pesqui*, *37*(2), 249. Retrieved from http://www.scielo.br/pdf/ep/v37n2/en_v37n2a03.pdf

Garcez, A., Duarte, R., & Eisenberg, Z. (2011). Production and analysis of video recordings in qualitative research. *Educação E Pesquisa*, *37*(2), 249–261.

Gee, J. P. (2004). *Situated language and learning a critique of traditional schooling*. New York: Routledge. doi:10.1111/j.1467-9345.2006.02802_1.x

Gee, J. P. (2010). *New digital media and learning as an emerging area and" worked examples" as one way forward*. Cambridge, MA: MIT Press.

Gee., J. P. (1990). *Social Linguistics and Literacies: Ideology in Discourses.* Bristo, PA: The Falmer. Retrieved from http://www.periodicos.ufsc.br/index.php/desterro/article/download/11567/11194

Geertz, C. (1973). *The interpretation of cultures: Selected essays (Vol. 5019).* Basic books.

Gibbs, R. (1994). *The poetics of mind: Figurative thought, language, and understanding.* New York: Cambridge University Press.

Gilakjani, A. P. (2011). Visual, auditory, kinaesthetic learning styles and their impacts on English language teaching. *Journal of Studies in Education*, *2*(1), 104–113.

Gilakjani, A. P., & Leong, L. M. (2012). EFL Teachers" Attitudes toward Using Computer Technology in English Language Teaching. *Theory and Practice in Language Studies*, *2*(3), 630–636.

Gill, P. Stewart, K., Treasure, E. &, & Chadwick, B. (2008). Methods of data collection in qualitative research: interviews and focus groups. *British Dental Journal*, *204*(6), 291–295. doi:10.1038/bdj.2008.192

Gillen, J., & Barton, D. (2010). *Digital Literacies*. London: University of London.

Godwin-jones, R. (2011). Emerging Technologies Mobile Apps for Language Learning. *Language Learning & Technology*, *15*(2), 2–11. doi:ISSN 1094-3501

Goktas, Y., Yildirim, S., & Yildirim, Z. (2009). Main Barriers and Possible Enablers of ICTs Integration into Pre-service Teacher Education Programs. *Educational Technology & Society*, *12*(1), 193–204.

Golafshani, N. (2003). Understanding reliability and validity in qualitative research. *The Qualitative Report*, *8*(4), 597–606.

Goldman, S. & McDermott, R. (2009). *Staying the course with video analysis, in Goldman, R., Pea,R, Barron and Derry Video Research in the learning sciences*. New York: Routledge.

Good, T., & Brophy, J. (1994). *Looking In Classrooms* (6th ed.). New York: HarperCollins.

Goodman, K. S. (1996). *Ken Goodman On Reading*. Michigan, Canada: Pearson Education Canada.

Goodwin, C. (1993). Recording human interaction in natural settings. *Pragmatics*, *3*(2), 181–209.

Goodwin, K. (2012). Use of Tablet Technology in the Classroom. *State of New South Wales, Curriculum and Learning Innovation Centre*, 1–96.

Gordon, M. (2009). Towards a pragmatic discourse of constructivism: reflections on lessons from practice. *Education Studies*, *54*, 39–58.

Gray, L., Thomas, N., & Lewis, L. (2010). *Teachers' Use of Educational Technology in U.S. Public Schools: 2009 (NCES 2010-040). National Center for Education Statistics, Institute of Education Sciences, U.S.* Washington, DC.

Group, N. L. (1996). A Pedagogy of multiliteracies: Designing social futures. *Harvard Educational Reveiw*, *66*, 60–92.

Gudmundsdottir, G. B. (2010). The use of ICT in South African classrooms and the double literacy trap. In Desai, Z., Qorro, M. & Brock-Utne, B. (eds.). *Educational Challenges in Multilingual Socities*, 147 – 172.

Gudmundsdottir, G. B. (2011). *From digital divide to digital opportunities? A critical perspective on the digital divide in South African schools*. *Department of Educational Research, Faculty of Educational Sciences*. OSLO.

Guikema, J. P., Williams, L., Abraham, L. B., Blyth, C. S., Bostelmann, E. D., Gómez, R. L., … Lange, K. (2014). *Digital Literacies in Foreign and Second Language Education Edited by Digital Literacies in Foreign and Second Language Education* (Vol. 12). USA: CALICO Monograph series. Retrieved from https://calico.org/bookfiles/pdfs/DigitalLiteracies.pdf#page=278

Gülbahar, Y. (2007). Technology planning: A roadmap to successful technology integration in schools. *Computers and Education*, *49*(4), 943–956.

Hallam, M. K. (2009). Why teacher dispositions are a crucial aspect of student success. *The Language Educator*. Retrieved November 17, 2015, from http://video.wallace.edu/pd/articles/2013/2013_TLE_Jan09_Article.pdf

Harris, S. (2002). Innovative pedagogical practices using ICT in schools in England. *Journal of Computer Assisted Learning*, *18.*, 449–458.

Hartson, H. R. (2003). Cognitive, physical, sensory, and functional affordances in interaction design. *Behaviour and IT*, *22*, 315–338.

Haugland, S. W. (1992). The effect of computer software on preschool children's developmental gains. *Journal of Computing in Childhood Education*, *31*(1), 15–30.

Haugland, S. W. (1999). What role should technology play in young children's learning? *Young Children*, *54*(9), 26–30.

Haugland, S. W. (2000). Early childhood classrooms in the 21st century: Using computers to maximize learning. *Young Children*, *55*(1), 12–18.

Heath, C., Hindmarsh, J. & Luff, P. (2010). *Video in qualitative research: Analysing social interaction in everyday life.* London: Sage Publications.

Hejian, C. (1997). Paralanguage and utterance meaning. *Journal of Foreign Languages*, *5*.

Henderson, S., & Yeow, J. (2012). iPad in education: A case study of iPad adoption and use in a primary school. *In System Science (HICSS), 2012 45th Hawaii International Conference on*, 78–87.

Henning, E., van Rensburg, W., & Smit, B. (2004). *Finding your way in qualitative research.* (1st ed.). Pretoria: Van Schaick.

Hillman, M. & Marshall, J. (2010). Evaluation of digital media for emergent literacy. *Computers in Schools*, *25*(4), 256–270.

Hismanoglu, M. (2012). THE IMPACT OF A CURRICULAR INNOVATION ON PROSPECTIVE EFL TEACHERS ' ATTITUDES TOWARDS ICT. *International Journal of Instruction*, *5*(1).

Holloway, D., Green, L., & Livingstone, S. (2013). *Zero to eight: Young children and their internet use*. LSE, London: EU Kids Online.

Holloway, T. & Jefferson, W. (2007). *Doing qualitative research differently, free association, narrative and the interview method*. (Eds, Ed.) (1st ed.). London New York.

Huang, W. H. D. (2010). A case study of wikis' effects on online transactional interactions. *Journal of Online Learning and Teaching*, *6*(1), 1–13.

Hughes, J. E., & Narayan, R. (2009). Collaboration and learning with wikis in post-secondary classrooms. *Journal of Interactive Online Learning*, *8*(1), 63–82.

Hultman, K. (2011). *Barn, linjaler och andra aktörer: Posthumanistiska perspektiv på subjektskapande och materialitet i förskola/skola. (Doctoral dissertation)*. Stockholm University.

Huppauf, B. & Wulf, C. (2009). *Dinamic and performativity of imagination: The images between the visible and invisible*. New York: Routledge.

Hutchison, A., Beschorner, B., & Schmidt-Crawford, D. (2012). Exploring the use of the iPAD for literacy learning. *Reading Teacher*, *66*, 15–23. doi:10.1002/TRTR.01090

Hutchison, A. & Reinking, D. (2011). Teachers' perceptions of integrating information and communication technologies into literacy instruction: A national survey in the United States. *Reading Research Quarterly*, *46*(4), 312–333.

Hutchison, A., Beschorner, B., & Schmidt-Crawford, D. (2012). Exploring the use of the iPad for literacy learning. *The Reading Teacher*, *66*, 15–23.

IITE Brief, 2012. (2012). ICTs FOR CURRICULUM CHANGE UNESCO Institute for Information Technologies in Education CONTENTS :, (April).

InfoDev. (2010). Information and Communication Technology for Education in India and South Asia Essay II ICT in School Education (Primary and Secondary). *Price Water House Coopers*, 1–24.

Jeon-Ellis, G., Desbski, R., & Wigglesworth, G. (2005). Oral interactions around computers in the project oriented CALL classroom. *Language Learning and Technology*, *9*(3), 121–145. Retrieved from Retrieved from http://llt.msu.edu/vol9num3/jeon/default.html

Jewitt, C. (2012). *An introduction to using video for research* (No. 3). London.

Jewitt, C. & Kress, G. (2003). *Multimodal Literacy*. New York: Peter Lang Publishers Inc.

Jones, C. and Ventola, E. (2008). *From Language to Multimodality: New Developments in the Study of Ideational Meaning.* London: Equinox.

Jones,R., Fox, C., & Levin, D. (2011). *state technology leadership essential for 21st learning*.

Kahn, G. (2012). Open-ended tasks and qualitative investigation of second language classroom discourse. *Journal of Ethnographic and Qualitative Research*, *6*, 90–107.

Karsenti, T., & Fievez, A. (2013). *The iPad in education: uses, benefits, and challenges. A survey of, 6057 students and 302 teachers* (Vol. . A survey). Quebec, Canada: CRIFPE.

Keefe, B. E. & Copeland, S. R. (2011). What Is Literacy ? The Power of a Definition. *TASH*, *36*(3-4), 92–99.

Kennedy, E., Dunphy, E., Dwyer, B., Hayes, G., McPhillips, T., Marsh, J., O'Connor, M., & Shiel, G. (2012). *Literacy in early childhood and primary education (Children aged 3-8 Years)(Commissioned research report, National Council of Curriculum and Assessment (NCCA)).*

Kent, N., & Facerw, K. (2004). Different worlds ? A comparison of young people ' s home and school ICT use. *Journal of Computer Assisted Learning*, *20*(SPECIAL SECTION), 440–455. doi:10.1111/j.1365-2729.2004.00102.x

Kersaint, B., Hornton, H., Stohl., & Garofalo, J. (2003). Technology Beliefs and Practices of Mathematics Education Faculty,. *Journal of Technology and Teacher Education*, *11*(4), 549–577.

Kilburn, D. (2014). *Methods for recording video in the classroom: producing single and multi-camera videos for research into teaching and learning.* (No. 10). England.

Klein, L., & Knitzer, J. (2006). Effective Preschool Curricula and Teaching Strategies. Pathways to Early School Success. *National Center for Children in Poverty*, (2). Retrieved from http://files.eric.ed.gov/fulltext/ED522728.pdf

Knapp, P. & Watkins, M. (2005). *Genre,Text, Grammar: Technologies for Teaching and Assessing Writing*. Australia: University of South Wales Press Ltd.

Kohonen, V., Jaatinen, R., Kaikkonen, P., & Jehtovaara, J. (2001). *Experiential Learning in Foreign Language Education*. New York: Routledge.

Koshy, V. (2010). *Action Research for Improving Educational Practice. A Step-by-step guide* (2nd ed.). London: Sage Publications.

Kozma, R. B. (2003). Technology and classroom practices: An international study. *Journal of Research on Technology in Education*, *36*(1), 1–14.

Krashen, S. (1989). We Acquire Vocabulary and Spelling by Reading: Additional Evidence by the Imput Hypothesis. *The Modern Journal of Language*, *73*(4), 440–464.

Kress, G. (2003). *Literacies: Literacy in the New Media Age*. New York: Routledge.

Kress, G. (2007). *Meaning, Learning And Representation in a Social Semiotic Approach to Multimodal Commuication. In A. McCabe, M. O'Donnell & R.Whittaker (Eds.). Advances in Language and Education*. London: Continuum International Publishing Group.

Kress, G. & Van Leeuwen, T. (2001a). *2001. Multimodal Discourse: The Modes and Media of Contemporary Communication.* Oxford UK: Oxford University Press.

Kress, G. & Van Leeuwen, T. (2001b). *Multimodal Discourse.* New York: Oxford University Press.

Kubey, R. (1997). *Media literacy in the information age: current perspectives*. New Brunswick NJ: Transaction Publishers.

Kukulska-Hulme, A., & & Shield, L. (2008). An overview of mobile assisted language learning: From content delivery to supported collaboration and interaction. doi:10.1017/S0958344008000335

Kvasny, L. (2006). The Role of the Habitus in Shaping Discourses about the Digital Divide. *Journal of Computer Mediated Communication*, *10*(2), 1–23.

Kyanka-Maggart, J. (2013). *iPads, Motivation, Self-Efficacy, Engagement in Upper Elementary School Mathematics*. Baker University.

Labuschagne, A. (2003). Qualitative research: Airy fairy or fundamental? *The Qualitative Report*, *8*(1). Retrieved from http://www.nova.edu/ssss/QR/QR8-

Lai, C. (2015). Modeling teachers' influence on learners' self-directed use of technology for language learning outside the classroom. *Computers & Education*, *82*, 74–83.

Lankshear, C., & Knobel, M. (2008). *Digital literacies : concepts, policies and practices*. *Names*. New York: Peter Lang, International Academic Publishers. Retrieved from http://sites.google.com/site/colinlankshear/DigitalLiteracies.pdf

Lantolf, J. P. (2000). *Introducing Sociocultural Theory. In Lantolf, J.P. and Appel, G. (Eds): Sociocultural Theory and Second Language Learning*. UK: Oxford University Press.

Lantolf, J. P. (2003). *Intrapersonal communication and internalization in the second language classroom. In A. Kozulin, V. S. Ageev, S. Miller and B. Gindis. (Eds.), Vygotsky's Educational Theory in Cultural Context*. Cambridge: Cambridge University Press.

Lantolf, J. P., & Thorne, S. L. (2002). Second Language Learning, 197–221.

Lantolf, J. P., & Pavlenko, A. (1995). Sociocultural theory and second language acquisition. *Annual Review of Applied Linguistics*, *15*, 108–124.

Lantolf, J. P., & Pavlenko, A. (2001). *(S)econd (L)anguage (A)ctivity: Understanding learners as people. In M. Breen.(Ed.), Learner contributions to language learning: New directions in research*. London: Pearson.

Lantolf, J. P., & Poehner, M. E. (2011). Dynamic assessment in the classroom: Vygotskian praxis for second language development. *Language Teaching Research*, *15*(1), 11–33.

Lantolf, J.P. & Poehner, M. E. (2008). *Sociocultural Theory and the Teaching of Second Languages*. London: Equinox Publishing Ltd.

Lefever-Davis, S., & Pearman, C. J. (2015). Reading, Writing and Relevancy: Integrating 3R's into STEM. *Open Communication Journal*, *9*(1), 61–64.

Li, S. C., Pow, J. W. C., Wong, E. M. L., & Fung, A. C. W. (2010). Empowering student learning through Tablet PCs: A case study. *Education and Information Technologies*, *15*(3), 171–180. doi:10.1007/s10639-009-9103-2

Lidz, S. C. (1991). *Practical Guide to Dynamic Assessment*. New York: The Guilford Press.

Lim, C. P. (2002a). A theoretical framework for the study of ICT in schools: A proposal. *British Journal of Educational Technology*, *34*(4), 411–421.

Lim, C. P. (2002b). Theoretical Framework for the study of ICT in schools: A proposal. *British Journal of Education Technology*, *33*(4), 415–426.

Lim, C. P. (2007). Effective integration of ICT in Singapore school: pedagogical and policy implications. *Educational Tech Research Dev*, *55*, 83–116.

Little, D. (1999). Developing learner autonomy in the foreign language classroom: a social-interactive view of learning and three fundamental pedagogical principles. *Revista Canaria de Estudios Ingleses*, *38*, 77–88.

Little, D. (2000a). Learner autonomy and human interdependence: some theoretical and practical consequences of a social-interactive view of cognition, learning and language. In B. Sinclair, I. McGrath and T. Lamb (eds), Learner Autonomy, Teacher Autonomy: Future Directions,. *Harlow: Longman/Pearson Education.* Retrieved June 13, 2015, from https://www.llas.ac.uk/resources/gpg/1409

Little, D. (2000b). Learner autonomy: why foreign languages should occupy a central role in the curriculum. In S. Green (ed.), New Perspectives on Teaching and Learning Modern Languages, 24-45. Clevedon: Multilingual Matters.

Littlejohn, A., Suckling, C., Campbell, L. & McNicol, D. (2002). The amazingly patient tutor: students' interactions with an online carbohydrate chemistry course. *British Journal of Educational Technology*, *33*(3), 313–321.

Loizos, P. (2000). *Video, film and photographs as research documents. In Martin W. Bauer & George Gaskell (Eds.), Qualitative researching with text, image and sound. A practical handbook*. London: Sage Publications.

Long, T., Liang, W., & Yu, S. (2013). A study of the tablet computer ' s application in K-12 schools in China Taotao Long The University of Tennessee Knoxville , USA Wenxin Liang Center for Distance Education , Beijing Institute of Education , China Shengquan Yu College of Educational Technol, *9*(3), 61–70.

Louw, P. (2015, August 29). Times Live. *Report Warns of Looming Teacher Shortage*. Johannesburg.

Lovelyn, A. E. (2004). The importance of language education in national development. *International Journal of Emotional Psychology and Sport Ethics*, *6*, 87–90.

Lundkvist, M. (2005). *Förskolans datorkultur i barn –och vexenperspektiv. (Doctoral dissertation)*. Finland.

Lys, F. (2013). The development of advanced learner oral proficiency using iPads. *Language Learning & Technology*, *17*(3), 94–116. Retrieved from http://www.llt.msu.edu/issues/october2013/v17n3.pdf#page=99

Makin, L. & Diaz, C. J. (2002). *Literacies in Childhood: Changing Views, Challenging Practice*. Sydney, London, Philadelphia: MacLennan Pty Ltd.

Marcelle G. (2000). Gender, Justice and ICTs. Retrieved June 12, 2015, from Http://www.un.org/womenwatch/daw/csw/marcelle.htm.

Marree, K. (2007). *First Steps in research.* Pretoria: Van Schalk Publishing.

Marsh, J. A. (2004). *Popular Culture, Media and Digital Literacies in Early Childhood*. London: Routledge.

Marshal, C. & Rossman, G. B. (2006). *Designing Qualitative Research* (4th ed.). London: Sage Publications.

Marshall, C. & Rossman, G. B. (2011). *Primary Data Collection Methods Designing Qualitative Research*. Los Angeles, CA: Sage Publications.

Mayer, R. E. (2004). Should there be a three-strikes role against pure discovery learning. The case for guided methods of instruction. *American Psychologist*, *59*, 14–19.

McCoy, B. (2013). *Digital Distractions in the Classroom : Student Classroom Use of Digital Devices for Non-Class Related Purposes*. USA.

Mcculloch, G. (2004). *Documentary Research: In Education, History and the Social Sciences*. London New York: Routledge Falmer.

McGhee G, Marland G,R. & Atkinson, A. (2007). Grounded theory research: literature reviewing and reflexivity. *J Adv Nurs*, *60*(3), 334–342.

McLeod, S. (2007). Lev vygotsky. *Simply Psychology*, 1–5. Retrieved from http://s3.amazonaws.com/edcanvas-uploads/123766/local/1384550695/Vygotsky.pdf

McLeod, S. (2009). Developmental Psychology. *Simply Psychology*. Retrieved November 6, 2015, from http://www.simplypsychology.org/piaget.html

McMillan, J. H. & Schumacher, S. (2010). *Research in Education: Evidence-Based Inquiry* (7th ed.). Boston, MA: Pearson.

McNamara, D. S. (2012). *Reading comprehension strategies: Theories, interventions, and technologies*. London New York: Psychology Press.

McNiff, J. and Whitehead, J. (2009). *All You Need to Know About: Action Research.* London: SAGE Publications.

McRae, J. (1991). *Literature with a small "l."* London: Macmillan.

Mehan, H. (1979). *Learning lessons: Social organization in the classroom*. Cambridge, MA: Harvard University Press.

Merriam, S. B. (1998). *Qualitative Research and Case Study Applications in Education: Revised and Expanded from Case Study Research in Education*. San Francisco: Jossey Bass Publishers.

Meurant, R. C. (2010). The iPad and EFL digital literacy. *Communications in Computer and Information Science*, *123 CCIS*, 224–234. doi:10.1007/978-3-642-17641-8_27

Mikre, F. (2011). The Roles of Information Communication Technologies in Education Review Article with Emphasis to the Computer and Internet. *African Journals Online*, *6*(2).

Miller, T. (2009). Formative computer-based assessment in higher education: The effectiveness of feedback in supporting student learning Education. *Assessment and Evaluation in Higher*, *34*(2), 181–192.

Miller, T. Mauthner, M.B. M. & Jessop, J. (2012). *Ethics in Qualitative Research* (2nd ed.). London: Sage Publications. Retrieved from https://www.google.co.za/search?tbo=p&tbm=bks&q=isbn:1446290913&gws_rd=ssl

Modisaotsile, B. M. (2012). The failing standard of basic education in South Africa. *Africa Institute of South Africa*, *72*.

Moody, A. K. (2010). Using Electronic Books in the Classroom to Enhance Emergent Literacy Skills in Young Children. *Journal of Literacy and Technology*, *11*(4), 22–52.

Mumtaz, S. (2000). Factors Affecting Teachers' Use of Information and Communications Technology: A review of the literature. Education,. *Journal of Information Technology for Teacher*, *9*, 319–341.

Mutemeri, J. (2013). School knowledge and everyday knowledge: Why the binary conceptualization. *The Journal of Pan African Studies*, *6*(6), 86–99.

Myers, M. D. (2009). *Qualitative Research in Business and Management*. Los Angels: SAGE Publication.

Nallaya, S. (2010). *The Impact of Multi-modal Texts on the Development of English Language Proficiency. Doctoral thesis,*. The University of Adelaide, Australia.

National College of Ireland. (2009). *Digital Literacy in Primary Schools (DLIPS) Report Digital Literacy : New Approaches to Par ticipation and Inquir y Lear ning to Foster Literacy Skills among*. Ireland.

Ndlovu, N. S., & & Lawrence, D. (2012). The quality of ICT use in South African classrooms. In *Towards Carnegie III* (p. 27). Cape Town: University of Cape Town.

NEEDU. (2012). *National Report 2012 Summary*. Pretoria. Retrieved from http://www.saqa.org.za/docs/papers/2013/needu.pdf

Neuliep, J. W. (2014). *Intercultural communication: A contextual approach* (6th ed.). London New York: Sage Publications.

Norris, C., Hossain, A. & Soloway, E. (2012). "Under what conditions does computer use positively impact student achievement? Supplemental vs. essential use." Vol. 2012. No. 1. 2012. In *Society for Information Technology & Teacher Education. International Conference.* (Vol. 1, pp. 2021–2028). Texas, USA: Association for the Advancement of Computing in Education (AACE).

Nunan, D. (1992). *Research Methods in Language Learning*. UK: Cambridge University Press.

Nunan, D. (1995). Closing the gap between learning and instruction. *TESOL Quarterly*, *29*, 133–157.

O'Leary, Z. (2004). *The essential guide to doing research. Sage.* Sage Publications.

O'Mahony, C., & Siegel, S. (2008). Designing classroom spaces to maximize social studies learning. . *Social Studies and the Young Learner*, *21*(2), 20–24.

O'Neill, G. & Jennings, D. (2012). The use of posters for assessment: A guide for staff. *University College Dublin*, 1–28. Retrieved from http://www.ucd.ie/t4cms/UCDTLA0039.pdf

Oakley, G., Pegrum, M., Faulker, R. & Striepe, M. (2012). *Exploring the pedagogical applications of mobile technologies for teaching literacy*. Perth: University of Western Australia and AISWA.

Oladunjoye, O. K. (2013). iPad and computer devices in preschool : A tool for literacy development among teachers and children in preschool iPad and computer devices in preschool : A tool for literacy development among teachers and children in preschool.

Oliver, R. M., & Reschly, D. J. (2007). *Effective Classroom Management: Teacher Preparation and Professional Development. TQ Connection Issue Paper*. *National Comprehensive Center for Teacher Quality*. Washington DC.

Opdenakker, R. (2006). Advantages and disadvantages of four interview techniques in qualitative research. In Forum Qualitative Sozialforschung/Forum. *Qualitative Social Research*, *7*(4).

Ortega, L. (2014). *Understanding second language acquisition*. London New York: Routledge.

Ortega-Llebaria, M., & Colantoni, L. (2014). L2 ENGLISH INTONATION. *Studies in Second Language Acquisition*, *36*(2), 331–353.

Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2013). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and Policy in Mental Health and Mental Health Services Research*, 533–544.

Papert, S. (1999). *What is Logo? And who needs it? Introduction to Logo Philosophy and Implementation.* Highgate Springs, Vermont: Logo Computer System Inc.

Patton, M. Q. (2002). *Qualitative evaluation and research methods*. Thousand Oaks, CA: Sage Publications.

Pellerin, M. (2012a). Digital documentation: Using digital technologies to promote language assessment for the 21st century. *OLBI Working Papers/Les Cashiers de l'ILOB*, *4*, 19–36.

Pellerin, M. (2012b). Mobile technologies put language learning into young second language learners's hands. In. In *EuroCALL 2012 Proceedings*.

Pellerin, M. (2014). Language Tasks Using Touch Screen and Mobile Technologies: Reconceptualising Task-Based CALL for Young Language Learners. *Canadian Journal of Learning and Technology*, *40*(1), 2–17.

Philip, L. J. (1998). Combining quantitative and qualitative approaches to social research in human geography - an impossible mixture? *Environment and Planning A*, *30*(2), 261–276. Retrieved from http://www.envplan.com/abstract.cgi?id=a300261

Piaget, J. (1972). *The psychology of the child*. New York: Basic books.

Pickett, S. J. (2012). Literacy Instruction Enriched Through Technology Grant Proposal. Stout: Doctoral dissertation, University of Wisconsin.

PISA. (2006). *Assessing scientific, reading and mathematical literacy: A framework for PISA 2006.* Paris: OECD Publications.

Platt, J. (1981). Evidence and proof in documentary research: 1: Some specific problems of documentary research. *The Sociological Review*, *29*(1), 31–52.

Plowman, L. & Stephen, C. (2003). A "benign addition"? Research on ICT and pre-school children. *Journal of Computer Assisted Learning*, *19*, 149–164.

Poehner, M. E., & Lantolf, J. P. (2005). Dynamic assessment in the language classroom. *Language Teaching Research*, *9*(3), 233–265.

Polit, D.F. & Hungler, B. P. (1999). *Nursing research: Principles and methods* (6th ed.). Philadelphia: JB Lippincott.

Polit, DF & Hungler, B. (1991). *Nursing research: principles and methods* (4th ed.). Philadelphia: Lippincott.

Polit, DF, Beck, CT & Hungler, B. (2001). *Essentials of nursing research* (5th ed.). Philadelphia: Lippincott, Williams & Wilkins.

Polkinghorne, D. E. (1988). *Narrative knowing and the human sciences*. Albany: State University of New York Press.

Polkinghorne, D. E. (1991). Narrative and self-concept. *Journal of Narrative and Life History*, *2 & 3*, 135–153.

Porter, T. B. (2005). Identity subtexts in the discursive construction of sustainability. *Electronic Journal of Radical Organisation Theory*, *9*(1), 102.

Pouezevana, S. (2012). Mobiles for teaching and learning: Translating theory into practice. Retrieved June 18, 2015, from https://edutechdebate.org./mobile-teaching/mobiles-for-teaching-and-learning-translating-theory-into-practice/

Prensky, M. (n.d.). *Digital games-based learning*. New York: McGraw-Hill.

Prensky, M. (2010). What I learned recently in NYC classroms. Retrieved May 5, 2015, from http://www.marcprensky.com/writing/Prensky-What_I_Learned_in_NYC_Classrooms-final.pdf

Prinsloo, M., & Bloch, C. (1999). Children's Early Literacy Learning: The Mismatch Between Policy Intention and Teacher Know-How'. *Critical Perspectives in South African Education: Reconstituting the Educational Realm, Cape Town: Maskew Millar,* 15–27.

Purdie, N., Reid, K., & Buckley, S. (2011). Literacy learning: what works for young indigenous students?: Lessons from the longitudinal literacy and numeracy study for indigenous students. *Literacy Learning: The Middle Years*, *19*(3), 51.

Purg, P. (2011). Open versus closed forms of knowledge assessment in a blended learning ecosystem. *Journal of Teacher Education for Sustainability*, *13*(1), 19–28.

Reed, J. (1995). Practitioner knowledge in practitioner research. In *Practitioner Research in Health Care* (pp. 46–61). New York: Springer US.

Richards, J. C. (2010). *English Language Teaching Materials: Theory and Practice*. New York: Cambridge University Press.

Ritchhart, R., Church, M., & Morrison, K. (2011). *Making thinking visible: How to promote engagement, understanding, and independence for all learners.* San Francisco, CA: John Wiley & Sons.

Robert K. Yin. (2014). *Case Study Research Design and Methods* (5th ed.). Thousand Oaks, CA: Sage Publications.

Rodgers, T.S., & Richards, J. C. (2014). *Approaches and Methods in Language Teaching*. (3rd, Ed.). UK: Cambridge University Press.

Rodrigues, S., Marks, A., & Steel, P. (2003). Developing science and ICT pedagogical content knowledge: A model of continuing professional development. *Innovations in Education and Teaching International*, *40*(4), 386 – 394.

Rodriguez F. and Wilson, E. (2000). *"Are Poor Countries Losing the Information Revolution?", infoDev Working Paper,*. Washington DC:

Roller, M.R. & Lavrakas, P. J. (2015). *Applied Qualitative Research Design: A Total Quality Framework Approach*. New York: The Guilford Press.

Roth, W. M. (2009). *Epistemic mediation: Video data as filters for the objectification of teaching by teachers, in Goldman, R., Pea,R, Barron and Derry (2006) Video Research in the learning sciences*. New York: Routledge.

Sandvik, M., Smørdal, O., & Østerud, S. (2012). Exploring iPads in practitioners' repertoires for language learning and literacy practices in kindergarten. *Nordic Journal of Digital Literacy*, *7*(3), 204–221.

Sawyer, R. K. (2006). *The Cambridge Handbook of the Learning Sciences.* New York: Cambridge University Press.

Scott, J. (1990). *A Matter of Record: Documentary Sources in Social Research*. Cambridge, UK: Polity Press.

Sebeok, T. A. (1994). *Signs : An Introduction to Semiotics*. Buffalo, London: University of Toronto Press.

Selber, S. A. (2004). *Multiliteracies for a Digital Age*. USA: Southern Illinois University Press.

Selfe, C. (2007). *Multimodal Compositions: Resource for Teachers*. USA: Hampton Press Inc.

Shallcross, T. & Robinson, J. (1999). A model of participation in continuing professional development and evaluation through action research in educating for sustainability. *Journal of In-Service Education, 25*(3), 403–22.

Shandu, N. (2011). *Digital Literacy: ICT Integration in English Grade 10 First Aditional Language Teaching TAL LIT LISH FI ll thesis s TERAC IRST AD submitted M Unive F D Super Y: ICT I DDITION Nonh d in fulfil MASTER ersity of t Faculty o Decembe rvisor: D INTEGR NAL LA By*. University of the Western Cape.

Sharp, J. G. (2012). *Success with your Education Research Project: Study Skills in Education*. London, New York: Sage Publications.

Sharples, M., Taylor, J., & Vavoula, G. (2005). Towards a Theory of Mobile Learning. *Proceedings of mLearn*, *1*, 1–9. doi:citeulike-article-id:6652555

Shelly, G., Gunter, G., & Gunter, R. (2012). *Teachers Discovering Computers: Integrating Technology in a Connected World* (7th ed.). USA: GEX Publishing Services.

Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. . *Education for Information*, *22*(2), 63–75.

Shepard, C. L. (2008). Multimodal Approaches to Teaching Reading in Hong Kong Primary Classrooms, 2005–2009.

Shield, G. (2000). A critical appraisal of learning technology using information and communication technologies. *Journal of Technology Studies*, *26*(1), 71–79.

Silverman, D. (2011). *Qualitative Research*. London: Sage Publications.

Smits, J., Huisman, J., & Kruijff, K. (2009). Home language and education in the developing world. *Background Paper for the EFA Global Monitoring Report Overcoming Inequality: Why Governance Matters. UNESCO*, 1–88.

Stake, R. E. (2010). *Qualitative Research: Studying How Things Work*. New York: Guilford Publications.

Stein, P. (2008). *Multimodal pedagogies in diverse classrooms: representation, rights and resources.* New York: Routledge.

Stockwell, G. (2007). Vocabulary on the move: Investigating an intelligent mobile phone-based vocabulary tutor. *Computer Assisted Language Learning*, *20*, 365–383.

Strause, A. & Corbin, J. (1998). *Basics of Qualitative Research* (3rd ed.). London: Sage Publications.

Street, B. (2003). What's "new" in New Literacy Studies? Critical approaches to literacy in theory and practice, *5*(2), 77–91.

Street, B. V. (2006). Autonomous and ideological models of literacy: Approaches from New Literacy Studies. *Media Anthropology Network*, *17*. Retrieved from http://www.philbu.net/media-anthropology/street_newliteracy.pdf

Sutherland, R., Armstrong, V., Barnes, S., Brawn, R., Breeze, N., Gall, M., ... & John, P. (2004). Transforming teaching and learning: embedding ICT into everyday classroom practices. *Journal of Computer Assisted Learning*, *20*(6), 413–425.

Swarts, L., de la Rey, C., Duncan, N., & Townsend, L. (2008). *Psychology: An Introduction* (2nd ed.). South Africa: Oxford University Press.

Tapscott, D. (2009). *Grown Up Digital. How the Net Generation is Changing Your World.* New York: McGraw Hill.

Tashakkori, A., & Teddlie, C. (2003). *The Past and Future of Mixed Methods Research: From Data Triangulation to Mixed Model Designs. In A. Tashakkori & C. Teddlie (Vol. Ed.). Handbook of Mixed Methods in Social & Behavioral Research (pp. 671- 701)*. Thousand Oaks, CA: Sage Publications.

Tashakkori, A., & Teddlie, C. (2009). *Foundations of Mixed Methods Research: Integrating Quantitative and Qualitative Approaches in the Social and Behavioral Sciences*. Thousand Oaks, CA: Sage Publications.

Tatet, E. S. (1999). Teaching in under-resourced schools: The teach for America example. *Theory into Practice*, *38*(1), 37–45.

Taylor, S. (2012). How does socio-economic status impact on educational outcomes in South Africa? *Education Matters, UNISA*. Retrieved January 17, 2015, from http://www.unisa.ac.za/cedu/news/index.php/2012/09/how-does-socio-economic-status-impact-on-educational-outcomes-in-south-africa/

Tharp, R. G., and Gallimore, R. (1988). *Rousing minds to life: Teaching, learning, and schooling in social context.* Cambridge, England: Cambridge University Press.

The World Bank. (2012). ICT for Greater Development Impact: Information and Communication Technology Sector Strategy. *World Bank Group-Sector Strategy*, 79.

Thomas, G. (2011). *How to do your Case Study: A Guide for Students and Researchers*. Thousand Oaks, CA: Sage Publications.

Thompson, I. (2013). The mediation of learning in the zone of proximal development through a co-constructed writing activity. *Research in the Teaching of English*, *47*(3), 247–276.

Thorne, S. L., Sauro, S., & Smith, B. (2015). Technologies, Identities, and Expressive Activity. *Annual Review of Applied Linguistics*, *35*, 215–233.

Tinio, V. L. (2002). ICT in Education. *United Nations Development Programme*, 34. Retrieved from http://akgul.bilkent.edu.tr/egitim/eprimer-edu.pdf

Tjale, A & De Villiers, L. (2004). *Cultural issues in health and health care.* (1st ed.). Cape Town: Juta.

Tondeur, J., van Keer, H., van Braak, J., & Valcke, M. (2008). ICT integration in the classroom : Challenging the potential of a school policy. *Computers and Education*, *51*, 212–223.

Toomey, R. (2001). Information and communication technology for teaching and learning. Schooling issues digest, 2, 1-6. Canberra, AU: Commonwealth Department of Education, Science and Training.

Turuk, M. C. (2008). The relevance and implications of Vygotsky's sociocultural theory in the second language classroom. *Arecls*, *5*, 244–262.

UNESCO. (2002a). INFORMATION AND COMMUNICATION TECHNOLOGY IN EDUCATION.

UNESCO. (2002b). *Information and communication technology: A curriculum for schools and programme teacher development.* Paris: Division of Higher Education.

UNESCO. (2005). *Integrating ICTs into the curriculum: Analytical Catelogue of key publications*. Bangkok: UNESCO Bangkok.

UNESCO. (2014). *Education Strategy 2014-2021*. Paris, France. Retrieved from http://unesdoc.unesco.org/images/0023/002312/231288e.pdf

UNESCO Institute for Statistics. (2008). *International literacy statistics: A review of concepts, methodology, and current data.* Montreal, Canada:

Unesco, U. N. E. S. and C. O. (2004). *Building Capacity of Teachers/Facilitators in Technology-Pedagogy Integration for Improved Teaching and Learning Building Capacity of Teachers / Facilitators in Technology-Pedagogy Integration for Improved Teaching and Learning Final Report*.

United Nations. (2013). Youth and ICTs. *United Nations Publications*, 1–7. Retrieved from http://www.un.org/esa/socdev/documents/youth/fact-sheets/youth-icts.pdf 16/06/2015

United Nations Development Programme. (2015). Post-2015 Development Agenda: Sustainable Development Goals (SDGs). *UNDP*. Retrieved November 5, 2015, from http://www.undp.org/content/undp/en/home/mdgoverview/post-2015-development-agenda.html

United Nations Educational Scientific and Cultural Organization. (2006). *Literacy for Life: Education for All Global Monitoring Report 2006*. *Gender and Education*. Retrieved from http://www.unesco.org/new/en/education/themes/leading-the-international-agenda/efareport/reports/2006-literacy/

Unsworth, L. (2008). *Multimodal Semiotics: Functional Analysis in Contexts of Education.* London: Continuum International Publishing Group.

Urguhart, A. H., & Weir, C. J. (2014). *Reading in a second language: Process, product and practice*. New York: Routledge.

Van Lier, L. (2004). *The ecology and semiotics of language learning: A sociocultural perspective*. Norwell, MA: Kluwer.

Vanderlinde, R. & van Braak, J. (2011). A new ICT curriculum for primary education in Flanders: Defining and predicting teachers' perceptions of innovation attributes. *Educational Technology and Society*, *14*(2), 124–35.

VanderScoter J, Ellis D, & Railsback, J. . (2001). *Technology in early childhood education: Finding the balance*. Portland, OR: Northwest Regional Educational Laboratory.

Vaughn, K. A. (2012). *Teacher Dispositions and Student Achievement*. THE CLAREMONT GRADUATE UNIVERSITY.

Vierra, A. & Pollock, J. (1998). *Collecting Qualitative Data. In Reading Educational Research.* Gorsuch Scarisbrick: Scottsdale.

Voogt, J. (2012). *Policy Brief: ICTs for Curriculum Change*. Russia: UNESCO, IITE.

Vrasidas, C., & Glass, G. V. (2005). *Preparing teachers to teach with technology.* Greenwich, CT: Information Age Publishing.

Vygosky, L. S. (1978). *Mind and language*. Cambrodge, MA: Harvard University Press.

Vygosky, L. S. (1986). *Thought and Language (A.Kozulin, trans)*. Cambridge, MA: MIT Press.

Vygosky, L. S. (1987). *Culture, Communication and Cognition: Vygoskian Pespectives*. Cambridge: Cambridge University Press.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.

Wallace, S. (2013). *Doing Research in Further Education and Training*. London: Sage Publications.

Walsh, M. (2005). "Reading visual and multimodal texts: how is 'reading' different?" in Conference Proceedings, Multiliteracies and English Teaching K-12 in the Age of Information and Communications Technology ALEA Conference 2004,. University of New England.: England.

Walsh, M. (2010). Multimodal literacy: What does it mean for classroom practice?. *Australian Journal of Language and Leteracy*, *33*(3), 211–239.

Wang, F., Kinzie, M.B., McGuire, P., & Pan, E. (2009). Applying technology to inquiry-based learning in early childhood education. *Early Childhood Education Journal*, *37*, 381–389. doi:10.1007/s10643-009-0364-6

Warschauer, M. (2000). The changing global economy and the future of English teaching. *Tesol Quarterly*, 511–535.

Watson, D. M. (2001). Pedagogy before Technology: Re-thinking the Relationship between ICT and Teaching. *Education and Information Technologies*, *6*(4), 251–266.

Watson, D. M., Cox, M. & Johnson, D. (1993). *The ImpacT Report*. London: Kings College.

Watts, M. T. (1975). *Reading the landscape of America*. New York, NY: MacMillan Books.

WCED. (2012). Khanya Project. Retrieved May 6, 2015, from http://impumelelo.org.za/media/publications/khanya-project

Wellington, J. (2015). *Educational Research: Contemporary Issues and Practical Approaches* (2nd ed.). London New York: Bloomsbury Publishing Plc.

Wertsch, J. . (1998). *Mind as action.* New York: Oxford University Press.

Wheeler, S. (2001). Information and communication technologies and the changing role of the teacher. *Journal of Educational Media*, *26*(1), 7–17.

Wolf, S & Flewitt, R. (2010). New Technologies, New Multimodal Literacy Practices and Young Children's Metacognitive Development. *Cambridge Journal of Education*, *40*(4), 387–399.

Wong, L. H. (2012). A learner-centric view of mobile seamless learning. *British Journal of Educational Technology*, *43*(1), E19–E23.

Woodward, R. (2004). *Military Geographies*. UK: Blackwell Publishing.

Woodward, R. (2013). Military landscapes Agendas and approaches for future research. . *Progress in Human Geography, 0309132513493219.*

World Youth Report. (2003). Youth and Information and Communication Technologies (ICT). *United Nations Publications*, 310–333.

Yelland, N. J. (2007). *Shift to the future: Rethinking learning with new technologies in education*. New York: Routledge.

Yin, K. (1994). *Case Study Research: Design and Methods.* (2nd ed.). London: Sage Publications.

Yin, K. (2003). *Case Study Research: Design and Methods.* London: Sage Publications.

Yin, R. K. (2014). *Case study research: Design and methods*. London: Sage Publications.

Zhai, S., Milgram, P., and Buxton, W. (1996). The influence of muscle groups on performance of multiple degree of-freedom input (pp. 308–315). CHI: 96 Conference Proceedings.

Zonzi, A., Barkham, M., Hardy, G. E., Llewelyn, S. P., Stiles, W. B., & Leiman, M. (2014). Zone of proximal development (ZPD) as an ability to play in psychotherapy: A theory-building case study of very brief therapy. *Psychology and Psychotherapy: Theory, Research and Practice*, *87*(4), 447–464.

Appendix 1: Research Authorisation from WCED

Western Cape Government
Education

Directorate: Research

Audrey.wyngaard@westerncape.gov.za
tel: +27 021 467 9272
Fax: 0865902282
Private Bag x9114, Cape Town, 8000
wced.wcape.gov.za

REFERENCE: 20150713-1176
ENQUIRIES: Dr A T Wyngaard

Mr Kelvin Chabinga
Hector Petersen Residence UWC
Block F105
Bellville
7535

Dear Mr Kelvin Chabinga

RESEARCH PROPOSAL: INVESTIGATING THE INTEGRATION OF INFORMATION AND COMMUNICATION TECHNOLOGIES (ICTS) IN GRADE 6 ENGLISH HOME LANGUAGE LITERACY: A CASE STUDY OF ONE PRIMARY SCHOOL IN THE WESTERN CAPE

Your application to conduct the above-mentioned research in schools in the Western Cape has been approved subject to the following conditions:

1. Principals, educators and learners are under no obligation to assist you in your investigation.
2. Principals, educators, learners and schools should not be identifiable in any way from the results of the investigation.
3. You make all the arrangements concerning your investigation.
4. Educators' programmes are not to be interrupted.
5. The Study is to be conducted from **20 July 2015 till 30 September 2015**
6. No research can be conducted during the fourth term as schools are preparing and finalizing syllabi for examinations (October to December).
7. Should you wish to extend the period of your survey, please contact Dr A.T Wyngaard at the contact numbers above quoting the reference number?
8. A photocopy of this letter is submitted to the principal where the intended research is to be conducted.
9. Your research will be limited to the list of schools as forwarded to the Western Cape Education Department.
10. A brief summary of the content, findings and recommendations is provided to the Director: Research Services.
11. The Department receives a copy of the completed report/dissertation/thesis addressed to:

    The Director: Research Services
    Western Cape Education Department
    Private Bag X9114
    CAPE TOWN
    8000

We wish you success in your research.

Kind regards.
Signed: Dr Audrey T Wyngaard
Directorate: Research
DATE: 14 July 2015

Appendix 2: Information Sheet for the Participants

University of the Western Cape

Faculty of Education, Private Bag X17, Bellville, South Africa

27/07/2015

Background information sheet

Dear Sir/Madam,

My name is **Chabinga Kelvin**, a Masters student in the Language Education Department of the Faculty of Education at the University of the Western Cape. I am conducting research on the integration of the Information and Communication Technologies (ICTs) in Grade 6 English Home Language Literacy practices. The aim of the study is investigate how teachers make use of ICTs i.e. tablets to enhance Grade 6 learners' literacy skills in English Home Language on the title hereunder.

Research Title: Investigating the Integration of Information and Communication Technologies (ICTs) in Grade 6 English Home Language Literacy: A Case Study of one Primary School in Western Cape.

Data collection will be in the form of observations, document analysis, and recording the literacy practices in the Grade 6 classroom and interviews.

The research will not interfere in any way with the functioning of the school or with teaching and learning in the classroom. In addition, participation will be voluntary and so participants will be free to withdraw at any time without giving reasons should they feel uncomfortable with the research. Your participation and that of the learners in the study will remain anonymous. Information received as part of the study will be used for research purposes only. It will not be used in any public platform for any purposes other than to understand how the use of tablets enhances literacy development skills in Grade 6 classroom.

Should you wish to find out more about the research, you are welcome to contact my supervisor, Professor Nomlomo, whose contact details are provided below or indeed me.

Yours sincerely

Researcher: Mr. Chabinga Kelvin
Contact number: 071 848 8038
Email: 2353500@myuwc.ac.za

Supervisor: Prof. Vuyokazi Nomlomo
Tel. 021-9592650/2442
Email: vnomlomo@uwc.ac.za

Signature of the researcher: …….. Date:……

Appendix 3: Letter of Permission to the Principal

University of the Western Cape

Faculty of Education, Private Bag X17, Bellville, South Africa

PERMISSION LETTER

THE PRINCIPAL X PRIMARY SCHOOL

27/07/2015

[Address removed for anonymity purposes]

Dear Sir/Madam,

Re: Permission to conduct research in your School

My name is **Chabinga Kelvin** a Masters student in the Language Education Department of the Faculty of Education at the University of the Western Cape. I am conducting research on the integration of the Information and Communication Technologies (ICTs) in Grade 6 English Home Language Literacy in order to explore how teachers make use of ICTs i.e. tablets to enhance Grade 6 classroom literacy skills in English Home Language. The target group will be Grade 6 English Home Language class teacher/s and learners.

I would like to request your permission to observe Grade 6 teacher and learner's interaction in the English Home Language literacy practices as they use tablets for literacy development. With the help of the Grade 6 HL teacher, I would like to have an interview with selected Grade 6 HL learner at some stage in the study. Furthermore, I request you as the Principal of the school and the Intermediate Phase Head of Department and the Grade 6 HL teacher to participate in the interviews.

Yours sincerely,

Researcher: Mr. Chabinga Kelvin
Contact number: 071 848 8038
Email: 2353500@myuwc.ac.za

Appendix 4: Letter of Permission to the Head of Department intermediate Phase

University of the Western Cape

Faculty of Education, Private Bag X17, Bellville, South Africa

PERMISSION LETTER

THE INTERMEDIATE HEAD OF DEPARTMENT

27/07/2015

[Address removed for anonymity purposes]

Dear Sir/Madam,

Re: Participation in the research interview

My name is **Chabinga Kelvin** a Masters student in the Language Education Department of the Faculty of Education at the University of the Western Cape. I am conducting research on the integration of the Information and Communication Technologies (ICTs) in Grade 6 English Home Language Literacy in order to explore how teachers make use of ICTs i.e. tablets to enhance Grade 6 classroom literacy skills in English Home Language. The target group will be Grade 6 English Home Language class teacher/s and learners.

I would like to request your participation in the research through an interview as Head of Department of the Intermediate Phase.

I will appreciate any rendered assistance during this study.

Yours sincerely,

Researcher: Mr. Chabinga Kelvin
Contact number: 071 848 8038
Email: 2353500@myuwc.ac.za

Appendix 5: Letter of Permission to the Grade six Intermediate Phase Teacher

University of the Western Cape

Faculty of Education, Private Bag X17, Bellville, South Africa

THE INTERMEDIATE GRADE 6 TEACHER(S)

27/07/2015

[Address removed for anonymity purposes]

Dear Sir/Madam,

Re: Permission to conduct research in your Grade 6 English Home Language classroom

My name is **Chabinga Kelvin** a Masters student in the Language Education Department of the Faculty of Education at the University of the Western Cape. I am conducting research on the integration of the Information and Communication Technologies (ICTs) in Grade 6 English Home Language Literacy in order to explore how teachers make use of ICTs i.e. tablets to enhance Grade 6 classroom literacy skills in English Home Language. The target group will be Grade 6 English Home Language class teacher/s and learners.

I would like to request your permission to observe you and your learners during the English Home Language literacy lessons in order to understand how you and your learners make use of tablets for literacy development. I also request you to participate in the interview at some stage.

Any assistance during this study will be appreciated.

Yours sincerely,

Researcher: Mr. Chabinga Kelvin
Contact number: 071 848 8038
Email: 2353500@myuwc.ac.za

Appendix 6: Letter to the Parents

University of the Western Cape

Faculty of Education, Private Bag X17, Bellville, South Africa

THE PARENTS

27/07/2015

[Address removed for anonymity purposes]

Dear Sir/Madam,

Re: Permission to seat in your child's classroom activities for a research in the Grade 6 English Home Language classroom

My name is **Chabinga Kelvin** a Masters student in the Language Education Department of the Faculty of Education at the University of the Western Cape. I am conducting research on the integration of the Information and Communication Technologies (ICTs) in Grade 6 English Home Language Literacy in order to explore how teachers make use of ICTs i.e. tablets to enhance Grade 6 classroom literacy skills in English Home Language. The target group will be Grade 6 English Home Language class teacher/s and learners.

I would like to request your permission to seat, observe through video recording as well as access your child's written materials for the purposes of my research to understand how iPads are used in their learning of English as a home language. Some of the learners will requested to participate in a group interview as well. Their work will be kept confidential and parents on request can access results. Their learning activities will not be disrupted nor will I force them to participate in a group interview.

Any assistance during this study will be appreciated.

Yours sincerely,

Researcher: Mr. Chabinga Kelvin
Contact number: 071 848 8038
Email: 2353500@myuwc.ac.za

Appendix 7: Participants Consent Form

University of the Western Cape

Faculty of Education, Private Bag X17, Bellville, South Africa

Participants' Informed Consent form:

I agree to be part of the study and I am aware that my participation in this study is voluntary. If, for any reason, I wish to stop being part of the study, I may do so without having to give an explanation. I understand the intent and purpose of this study.

I am aware the data will be used for a Master's thesis presentation. I have the right to review, comment on, and/or withdraw information prior to the paper's submission. The data gathered in this study is confidential and anonymous with respect to my personal identity, unless I specify or indicate otherwise. In the case of classroom observations and interviews, I have been assured that my personal identity and that of the school will be protected, and that the researcher will not disrupt my duties.

I have read and understood the above information. I give my consent to participate in the study.

_____	_____	_____
Participant's signature	Designation	Date

_____ _____

Researcher's signature Date

Interview Schedule: Chabinga Kelvin

Study Title: Investigating the integration of Information and Communication Technologies (ICTs) in Grade 6 English Home Language Literacy: A Case Study of one Primary School in the Western Cape.

Appendix 8: Interview with the School Principal

1.1 Personal Profile

1. How many years have you been principal?
2. Briefly tell me about your academic and professional journey?

1.2 Interview Questions

1. What is your understanding of literacy in relation to language teaching?
2. What is your personal experience and belief on the use of Information and Communication Technologies (ICTs) as tools to enhance English Home Language learning?
3. What guidelines are there from WCED regarding ICT integration in language and literacy teaching and learning?
4. In your opinion, does the WCED adhere to the guidelines regarding ICT integration in the intermediate phase?
5. Does the school have ICT policy or regulation?
6. How do you monitor ICT integration in teaching and learning, particularly with regard to literacy development?
7. What measures have you taken to support teachers on the use of digital resources i.e. the tablets?
8. What has the performance been like in terms of language?
9. Would you attribute this performance to the use of tablets and related devices?
10. What specific software does your school use for teaching and learning?
11. If yes, what have you put in place to make it conform to the English Home Language curriculum standards?
12. How do you describe the impact of tablets on literacy development and and results?

Appendix 9: Interview with the Head of Department (English)

2.1 Personal Profile

1. Tell me a bit about your role as head of department intermediate phase.
2. What subjects do you teach and which one is your major?
3. How long have you been head of head of department?
4. Tell me a bit about your academic and professional journey?

1.3 Interview Questions

1. What is your understanding of literacy in terms of language.

2. What is your understanding of ICT integration in education especially in relation to literacy development?

3. Do you think the use of ICTs i.e. tablets enhances literacy development?

4. What sort of help do you give to language teachers in their use of tablets for literacy development?

5. What challenges if any do they bring concerning the use of tablet devices for literacy development?

6. What policy guidelines are there from WCED regarding ICTs integration in language and literacy teaching and learning?

7. How do you monitor ICT integration in teaching and learning, particularly with regard to literacy development?

8. How do you describe the impact of tablets on literacy development and and results?

9. What are your perceptions about ICTs i.e. tablet use in education?

10. Do you think tablet devices enhance reading and writing?

Appendix 10: Interview with the Grade 6 English Home Language Teacher

1.1 Personal Profile

1. How many years have you taught English as a Language
2. What other subjects do you teach apart from English?
3. Up to what level did you do English as a subject?

1.2 Interview Questions

1. What is your understanding of literacy development?

2. How long have you been using tablets as a tool for language and literacy teaching and learning?

3. What is your belief about using tablets language and literacy?

4. How often do you use tablets with learners in teaching English Home Language?

5. What sort of training did you receive or have in the use of ICTs for language teaching and learning?

6. How comfortable are you in using tablets to teach language and literacy with your Grade 6 class?
7. What sort of activities do you engage your learners in to make use of tablets for language and literacy development?
8. In your experience, do you think tablets improves literacy development of the learners?
9. What approaches or methods are you comfortable with when using tablets for literacy development?
10. What does the Curriculum Assessment Policy Statement (CAPS) say about ICTs and Literacy development?
11. What are some of the challenges do you come across while teaching English Home Language literacy?
12. How would you describe the impact of tablets on language and literacy development?

13. What support do you get regarding the use of tablets for language and literacy teaching and learning?

Appendix 11: Interviews with learners (Grade 6)

1. What digital devices do you have at home?
2. Do you have access to tablets at home?
3. What do you use them for?
4. What do you use tablets for in class?
5. How often do you learn English Home language using tablets?
6. Do you think tablets increase your reading and writing skills?
7. What activities or tasks have been used in your class with tablet technology to improve your reading and writing skills?
8. What problems do you experience in using tablets for English Home Language?
9. How do the tablets improve your reading and writing skills?