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Effectively digitizing communication with *Turnitin* for improved writing in a multilingual classroom

Abstract

This research aims to establish the effect of computer technology, specifically referring to the use of *Turnitin*, on writing in a South African multilingual language class. By employing a qualitative case study, the researchers observed the development of writing skills of 19 learners in an Afrikaans First Additional Language (FAL) class, utilising the internet and harnessing the use of blogs to collect data. Electronic interviews with learners and focus group discussions in a specially created chat room with other FAL teachers in the school were conducted to collect data. The conceptual framework incorporated the Technological Pedagogical Content Knowledge (TPACK) framework and Vygotsky's zone of proximal development (1978). This adapted framework was employed as the lens to evaluate the efficacy of computer technology on writing.

Findings indicate that the innovative application of *Turnitin,* a tool that provides a similarity index, to provide written corrective feedback (WCF), started an iterative cycle of review and contribution which lead to self-directed learning through spontaneous written collaboration amongst learners. Teaching was enhanced, learners felt more organised which resulted in more confidence, and learners' individual needs were met. Instant access to the grammar rules via *Turnitin's* quick mark comment led to the integration of the grammar rules and writing which is optimal for successful Afrikaans FAL writing.

Keywords: additional language teaching, written corrective feedback, self-directed learning, technology integration, *Turnitin*, technological pedagogical content knowledge (TPACK)

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1. Introduction

Modern-day learners find themselves in a technological world. They learn, live, work and play in a rapidly changing digital environment. These changes affect the ways in which learners acquire and use languages. It changes the way teachers teach a language as learners expect these technologies to be reflected in the classrooms (Zhao, 2003). The corporate world that these learners are prepared for need people who can apply their 21st century knowledge and skills to provide solutions for complex problems in a digital and competitive environment (Ghaith, 2010; Mills, 2011). Carneiro and Gordon (2013) are of the opinion that the most important requirement of the corporate world is individuals who are able to survive in an environment that is characterised by fast-moving technological innovations.

In addition, the increased technological environment has brought about huge changes in the socialising aspect of society with the creation of social media. Learners are engaging more and more in written communication instead of oral communication as a result of social media and are constantly busy conveying messages, feelings and emotions via social media. Thus, the digital learners are using electronic texts as their primary method of communication. Literacy has evolved to include several new literacies such as visual, financial, health, social, digital, mathematics, functional and media literacies. Hobbs et al. (2011) use the term "expanded literacy" in the new literacies discourse to describe the focus that has shifted from alphabetic and written texts to a literacy that encompasses social communication and ideology. Therefore, because schools need to prepare learners for a digital workplace, it is no more a matter of whether technology should be used but *how* to use the technology in classrooms to internalise and facilitate language learning.

2. Contextualisation and research problem

The research reported on in the article is an attempt to reach an in-depth understanding of the effect of technology, specifically related to the use of *Turnitin*, on the writing of a group of girls in a Grade 11 Afrikaans FAL classroom. In order to obtain the National Senior Certificate (NSC) in South Africa, learners have to pass an FAL and achieve at least 50% in the subject for university entrance. The two First Additional languages offered at the school attended by the participants in the study are Afrikaans and Sepedi. The writing skills of the learners are very important as 75% of the final FAL mark consists of writing; the oral component makes up 25% of the final mark (Department of Basic Education, 2012). However, the oral component is also influenced by the writing component because of content, logical flow of the argument, correct word order, good sentence structure and vocabulary that forms part of the writing process.

The research was conducted at a technologically advanced private school for girls in South Africa. Learners in this study were not only surrounded by technology, but have advanced technological skills. All learners and teachers have their own laptops for

schoolwork and research. Each classroom has an interactive white board with internet connectivity. The school has an Information Technology (IT) department consisting of the IT manager, two technicians and an IT Education Specialist who are always supportive. Communication with parents is via e-mail and the Communicator[1]. Some of the teachers make use of blogs and cell phones for collaborative learning in their lessons. Teachers communicate with learners who are part of overseas exchange programmes via email or Skype to monitor their work progress and to provide support where needed. An EduAdmin software programme is used for the administration of the school and the learners' continuous assessment and reports are available to the parents via this software programme. Management is appreciative towards teachers who take the initiative to provide interesting and innovative lessons via technology integration and the focus of staff development is on technology-enhanced teaching and learning.

Technology is also used in language teaching at this school. The biggest challenge in this particular language learning and teaching context is the huge variation in language proficiency and attitudes of the learners. The target audience was the Grade 11 Afrikaans FAL group which consisted of 19 girls. Although all the girls did Afrikaans as an FAL in Grade 11, Afrikaans was in many cases not their second language but in fact their third or fourth language. Some of them do not, as is expected in the National Curriculum, have a solid foundation in Afrikaans FAL and they do not have the required vocabulary or foundation for the desired level of proficiency for Afrikaans in Grade 8. On the other hand, some of the learners had been taught in Afrikaans as their home language in pre-primary, primary or high school. Consequently, the teachers were faced with bored Afrikaans-speaking learners because the content for Afrikaans FAL is not challenging to them. The problem in this specific school is that the learners enter the Grade 8 Afrikaans FAL class with different levels of pre-knowledge because they all come from different primary schools with different standards of curriculum delivery. Thus, teachers face the challenge of not only accommodating these different levels of language proficiency but also of helping these diverse learners to achieve the required learning outcomes.

The diversity among the participating learners is illustrated in Table 1.1. The information was gathered via a questionnaire[2] that the participating learners answered.

1 A simple, web-based control panel that allows one to upload calendar events, news, links to useful resources photographs and homework. All the information for parents and critical alerts for urgent news are available. No technical knowledge is required and a comprehensive online help system is available if help is needed. There is full control over what has been published. Parents have the option of customising the communication so that they receive only news relevant to them. The communicator is used widely in the education system in South Africa.

2 Learners answered a questionnaire and self-reported on their race, average percentage of Afrikaans FAL, the medium of instruction that they received in their pre-primary and primary schooling, the language that they predominantly use at home and in social circles as well as other languages that they use in order of proficiency.

Table 1.1: *Language background of the participating learners*

Participant	%		Medium of instruction in		Language		
	Afrikaans FAL	Race (Self-reported)	pre-primary schooling	primary schooling	used at home	used in social circles	Other languages in order of self-reported proficiency
1	70	White	English	English	English	English	Afrikaans
2	80	White	English	English	English	English Afrikaans	Afrikaans
3	86	White	English	English	English/ Portuguese	English	Afrikaans
4	90	White	English	English	Afrikaans/ English	Afrikaans/ English	French Afrikaans
5	85	White	English	English	English	English Afrikaans	Afrikaans
6	42	Mixed	English	English	Southern Sotho	English, Sotho, Tswana	Tswana English Xhosa Afrikaans
7	70	White	English	English	English	English	Afrikaans
8	45	Black	Setswana	English	Setswana	English/ Setswana	Sotho English Zulu Afrikaans
9	60	White	Afrikaans	English	English/ German	English	German Afrikaans
10	60	White	English	English	English	English	Afrikaans
11	60	Asian	English	English	English	English	Afrikaans
12	80	White	English	English	English/ Greek	English	Afrikaans
13	70	White	English	English	English	English	Afrikaans
14	65	White	English	English	English	English	Afrikaans
15	89	White	English	English	English/ Afrikaans	English/ Afrikaans	English/ Afrikaans Home language
16	60	Black	English	English	Shona	English	Zulu English Afrikaans

Participant	%		Medium of instruction in		Language		
	Afrikaans FAL	Race (Self-reported)	pre-primary schooling	primary schooling	used at home	used in social circles	Other languages in order of self-reported proficiency
17	58	Black	English	English	Ndebele/ English	English	English Afrikaans
18	60	White	English	English	English	English	Afrikaans
19	50	White	English	English	English	English	Afrikaans

As indicated in Table 1.1 the class includes multilingual learners with different levels of proficiency in Afrikaans and other languages. The problem is that all the learners have to achieve the same writing skills at the end of their Grade 12 year irrespective of their different levels of Afrikaans proficiency or their exposure to Afrikaans. Therefore, faced with this dilemma, the researchers wanted to understand how computer technology, focusing on *Turnitin* specifically, could be utilised to address this problem. This article aims to address the following research question: *How does Turnitin influence FAL Afrikaans writing in a multilingual class?*

3. The use of technology in language teaching and learning

The effect of technology on language teaching and learning has been investigated for over 30 years (Golonka et al., 2014; Choi et al., 2003; Murphy, 1988) yet the literature still reveals a need for further investigation because of the rapidly changing technological environment. Moreover, the majority of studies are exclusively based on English and other western European languages used as home languages. This state of affairs presents a challenge in terms of investigating the efficacy of technology use in Afrikaans FAL (Golonka et al., 2014) as this area in Afrikaans FAL is not well researched (Mihai, 2007; Lawrence, 2009). In this study the researchers will focus firstly on previous research on written feedback and the role of feedback in writing in an Afrikaans FAL class.

Ferris (2010) reports that empirical research on corrective feedback (CF) was rare before 1995. Writing was not ewmphasised in second language instruction. According to Sheen (2010), language learning was heavily influenced by the behaviourist views of language learning in the 1950s and 1960s and that habit formation was emphasised. Errors were perceived as damaging to learning and they had no role to play in language acquisition. However, in the 1970s and 1980s, language acquisition, Krashen's theory (1982) was driven by positive evidence but, again, there was no room for CF. Ferris (2010) refers to the amount of material that was designed in the early 1990s to address language issues

in second language writing. Ferris (2010) advocates the contextualisation of written CF in the writing process. CF was prioritised to focus on frequent and serious writing error patterns and to address the individual needs of the learners. Ferris (2010) claims that the purpose of error correction is to provide strategies to guide learners to independent writing.

Truscott (1996) argues that CF may lead to avoidance of unfamiliar constructions to avoid the danger of making mistakes. This argument has led to increased interest in CF and also several articles on CF (Ferris, 2010). However, Chandler (2003) disproved this theory of Truscott when he found that the accuracy of learners' writing increased in a mere 10 weeks. Chandler (2003) used an experimental group and a control group and reported that the learners completed the writing faster and with a small improvement in the quality of the content. In addition, there was more fluency in the writing of the learners. Thus, Chandler (2003) concluded that teachers need to provide error feedback and that learners must act on their errors in order to help them to increase the accuracy of their writing. The results of a study conducted Van Beuningen et al. (2012) provide convincing evidence that comprehensive CF enhances both grammatical and non-grammatical accuracy during revision and also in new pieces of writing. In addition, they provided counterevidence to the notion that CF results in learners avoiding complex structures. Their results also did not prove that learners benefit more from writing practice than from CF. Van Beuningen et al. (2012) conclude that comprehensive CF is useful in helping learners to improve the accuracy of their writing. Bitchener (2008) also provides convincing evidence on the improvement of a limited range of grammatical structures. In addition, Louw (2011) did a study on CF where he used a custom-programmed software tool and a set of standardised feedback comments. The experiment tested how effectively standardised feedback could be used when marking L2 student writing. The outcome was that CF can be positively used to make learners aware of their errors and to help teachers to identify more accurately where the students need support.

The role of written CF, also known as grammar correction or error correction in second language acquisition, has been a point of discussion for many years (Ferris, 2010). Krashen (1982) maintains that second language acquisition occurs unconsciously and that both a low affective filter and comprehensible input are important in the acquisition process. According to Krashen (1982), the learners' affective filters are raised when they focus on the grammatical structures and they develop a fear of making mistakes when they communicate in the target language. Truscott (2007) maintains that focusing on the errors will mean that learners will avoid more complex structures in future.

Nevertheless, the majority of teachers and learners believe in grammar correction and written CF (Ferris, 2010). Storch and Wigglesworth (2010) reported that, in the main, teachers give CF to learners on their writing and especially on grammar and lexis errors because they believe that this will help the learners to pick up and correct their errors. Teachers assume that CF will lead to correct grammar and spelling as well as the correct use of punctuation. In other words, these short-term corrections (immediate revision) will lead to second language acquisition in the long term. Sheen (2010) agrees that CF promotes learning because learners are forced to notice the gaps in their knowledge.

In conclusion, there is little doubt about the importance of written corrective feedback. In fact, it is now more important than ever because it may help learners to take responsibility for their own learning. The technology which is available means that learners may be more autonomous in their learning process than was previously the case. By providing meaningful feedback, teachers are becoming facilitators and they are guiding the learners to take responsibility for their own learning.

4. Adapted conceptual framework for integrating technology in writing feedback

Koehler and Mishra (2009) claim that the effective integration of technology into teaching and learning can only be achieved if knowledge of technology, pedagogy and content are simultaneously integrated. Technological knowledge (TK) refers to the use of technologies, pedagogical knowledge (PK) refers to the teaching processes used by the teacher and content knowledge (CK) refers to the subject matter that the teacher teaches to the learners (Koehler & Mishra, 2009). Four domains arose from the intersection of content knowledge, technological knowledge and pedagogical knowledge, namely, *technological content knowledge* (*TCK*), *pedagogical content knowledge* (*PCK*), *technological pedagogical knowledge* (*TPK) and technological pedagogical content knowledge* (*TPACK*) (Mishra & Koehler, 2006).

The technological pedagogical knowledge (TPK) and technological pedagogical content knowledge (TPACK) guided the investigation into language acquisition process focused on writing in Afrikaans in this inquiry. The researchers argue that the social construction of knowledge in the 21st century FAL classroom includes not only the integration of content, pedagogy and technology but also the improvement of sentence structures, the correct use of voacabulary and the correct use of tenses that will enhance the writing process of Afrikaans FAL. The TPACK Framework does not accommodate the process of writing; therefore Vygotsky's theory is merged with the TPACK Framework to form a new conceptual framework that includes the two pillars of FAL learning, namely, the content, that is, the grammar that forms the basis for good sentence structures and the improvement of the writing skill, that is, improved writing skills in the zone of proximal development of the learners. This conceptual framework guides this inquiry into the effect of technology on writing and provides the lens for this investigation to direct and manage the complexity of the digital landscape in education (Figure 1.1).

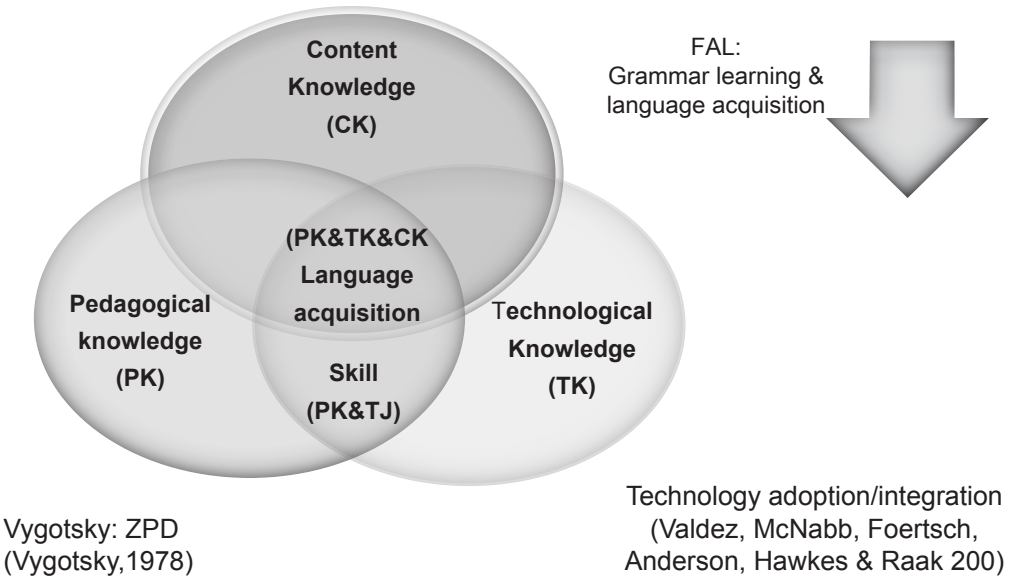

Figure 1.1: *Adapted conceptual framework*

In order to provide each learner with the best chance of success and to support each to surpass his/her own zone of proximal development, as suggested by Vygotsky (1978), the teacher should address learners' individual needs. According to Vygotsky (1978), the zone of proximal development is the distance between what the learner knows and what the learner could potentially know. Vygotsky (1978) focused on the way in which humans function when placed in a certain problem situation, with the tools to solve the problem. Vygotsky (1978) views learning as a social process within a certain context and thus social interaction is key to learning. By interacting with the teacher and capable peers in the discussion board of *Turnitin*, learners learn from one another and acquire knowledge and skills to improve their writing in Afrikaans FAL with the help of the knowledgeable teacher which is the expert in the Zone of Proximal Development according to Vygotsky (1978). Therefore, it is essential that teachers should provide powerful artefacts and learning opportunities for collaboration with experts in order to bridge the distance between learners' current levels of understanding and their potential levels. Vygotsky therefore informs the pedagogy needed to teach this writing skill in this context and represents the PK knowledge in Figure 1.1.

By providing individualised feedback to each individual learner, technology makes individual learning possible, but only if it is ubiquitous and is adopted by all role players. Discussions of the errors in the learners' writing in an open discussion board forum encourage everyone to learn from their own mistakes and to share it with other learners. By correcting their mistakes and sharing the corrections with each other, collaborate learning is taking place. The teacher is able to monitor the learners' progress on their sentence structures, the use of vocabulary and the use of the correct tense via *Turnitin*.

The third component of the framework is therefore technological knowledge (TK) which is *Turnitin* and the use of the quick mark comments. The advantage is that the quick mark comments may be customised. The grammar rules of Afrikaans FAL are embedded in this quick mark comments. It is immediately available to the learners on *Turnitin* in this quick mark comment and they can use the grammar rules to improve on their sentence structures, the correct use of vocabulary and the correct use of their tenses in Afrikaans. Technology is being used to transform content in order for learners to have a better understanding of the correct sentence structures, the correct use of vocabulary and the correct use of their tenses in Afrikaans to improve their writing skills (Mishra & Koehler, 2006). It is therefore important to note that teachers must integrate technology based on good pedagogical principles which can help the learner to grasp the content (Murray & Barnes, 1998; Levy, 1997). Technology is thus merely a teaching tool and not a purpose in itself and as such, should be used to integrate the learning and teaching methods with the available resources.

5. Methodology: a qualitative netnographic case study

Netnography (Kozinets, 1998) is a modern version of ethnography where communities and their cultures are studied online. Cultures were previously understood as geographically bounded groups but "geography can no longer be the defining framework for culture" (Boyd, 2009: 27). People construct cultures and communities on the internet through computer mediated communication (CMC) technologies. These online communities open up opportunities to study new types of culture-building and culture-sharing groups. Kozinets' netnography methodology (1998) was adapted to an educational setting which will be explained below. The electronic way in which data was collected was largely influenced by the research question, namely the effect of Turnitin on writing in a multilingual class. Netnography has the additional advantage that the researcher is able return to the original qualitative data set whenever needed during the data analysis phase (O' Reilly et al., 2007). The researchers used a qualitative research approach to gain understanding of the learners' and the teachers' meaning-making of this human phenomenon. As a teacher at this sampled school, one of the researchers had ready access to learners, making this a convenient sample.

Technology was deliberately integrated into the lessons with the sampled class. The approach was to teach with technology instead of just using it as an "add-on" at the beginning of January 2014. The researcher used the Smart Board, PowerPoint, Word and Excel software programs extensively in the past and introduced new technology such as the Smart Response System, Voki characters, *Turnitin*, chat rooms, blogging on Kid blog and YouTube. The researcher experienced that the learners were more engaged and excited about learning and experiencing new skills. The researcher decided to use *Turnitin* to address the individual learning needs of the learners by giving individual WCF.

Learners used their laptops to do essay writing. In the feedback, the researcher used different colours to highlight errors in word structure, sentence structure and punctuation,

as well as for any outstanding work done (Figure 1.2). The feedback worked in the following way: when an error was identified, the error was highlighted according to the different error categories mentioned above. A 'quick mark' with a full explanation of the applicable grammar rules was also provided as these rules are an integral part of the Afrikaans FAL curriculum. A sunny yellow indicated outstanding writing, pink highlighted a sentence structure error, blue showed a word structure error and punctuation errors were highlighted in purple. Learners were provided with feedback as written individual comments as well as audio individual comments, enhancing differentiation with the aid of technology. Figure 1.2 presents an example of an assignment which had been marked using quick mark comments:

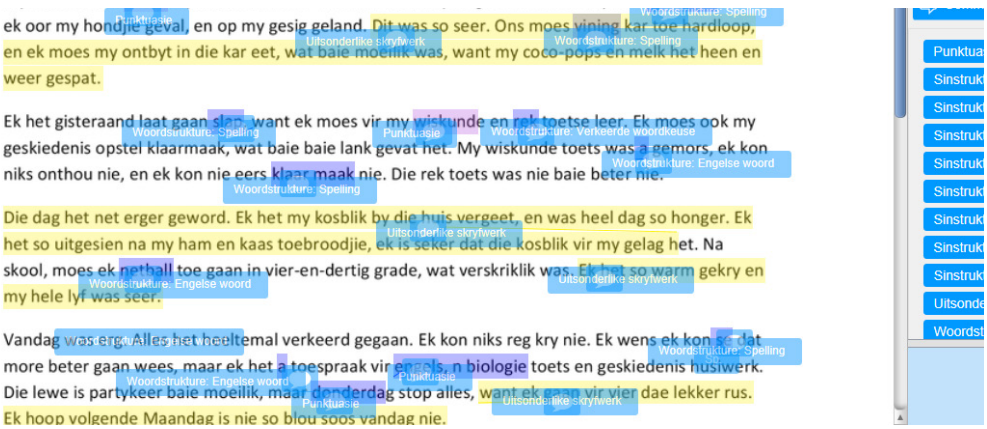

Figure 1.2: *Example of an assignment marked using the quick mark comments*

The researcher guided the learners to identify their errors, which they in turn corrected with the help of the quick mark comment, and with the help of both capable peers and the teacher on the discussion board. This helped them to learn from their mistakes and to take responsibility for their own learning.

All the assignments counted towards the marks that formed part of the learners' marks for the term and also towards their continuous assessment marks. This motivated the learners to upload their assignments and to strive to do their best. Writing is a time-consuming process and the learners benefited by using *Turnitin* for their writing. Table 1.2 presents a list of the assignments and the activities involved in each assignment that were uploaded onto *Turnitin*.

Table 1.2: *E-portfolio assignments*

Week	Learning task	Other activity
1	Curriculum vitae	May upload a picture of themselves on their curriculum vitae.
2	First draft of essay	Learners write the first draft of their essay and upload it on *Turnitin*.
3	Final draft of essay	Learners receive their first draft back. The word, sentence structure and punctuation mistakes were identified by the teacher using the quick mark comments on *Turnitin*. The comments were formulated by the teacher. The learners correct the mistakes and upload the final draft of the essay.
4	Dialogue	The learners write a dialogue, choosing their own topics. The learners upload their dialogue on *Turnitin*.
5	Correction of mistakes	The learners are expected to learn from their mistakes. They correct their mistakes using the Afrikaans First Additional Language study guide, cell phones for looking up the spelling or the Afrikaans word and use the discussion board either to ask for help or to learn from the other learners' mistakes.
6	Final transactional writing piece: email.	The learners write an email for an assessment mark

The empirical component of the study included anonymous online discussions in a blog on the part of the learners, observations of the learners when they were engaging in the online-discussions, class observations via video recordings of five lessons, five semi-structured interviews with the learners via email, two focus group discussions with the staff in a chat room and the written texts of the learners which had been uploaded on the *Turnitin* software programme in an e-portfolio as well as the learner's individual progress on *Turnitin* as the primary data. Each learner's progress could be monitored with the *Grade Mark* feature of *Turnitin* which provides an account of the types of errors as well as the frequencies of the errors. The errors that were assessed included the incorrect form of the word, use of the wrong word in the context of the sentence, incorrect spelling, the use of English words, incorrect word order, incorrect use of the past tense, lack of sense in what the learner wanted to convey, a missing word in the sentence, incorrect negative form and punctuation errors. The researcher also gave the learners recognition for excellent writing.

The blogs were anonymous to give learners the freedom to express their views and experiences of the integration of computer technology in the Afrikaans FAL class honestly and to see what the challenges were that they faced. The blog discussions of the learners were monitored from the beginning of June 2014 until the end of July 2014. The relevant computer technology, the learners' current level of computer proficiency and the challenges with the integration of technology in an FAL class were the focuses of the interviews with the learners via email. The initial questions were broad questions

and the responses to these questions informed the subsequent questions as the study progressed. The focus group discussion provided the researchers with more information on the effect of technology on writing in an FAL classroom and, specifically, information on the relevant technologies available, the benefits of technology integration and whether individual learning was being promoted with the aid of technology in an FAL classroom. The researcher decided to conduct focus group discussions in a chat room with the FAL teachers and the technician because they would be able to shed some light on the influence of the integration of relevant computer technologies on teaching and learning in a multilingual FAL class. Although the chat room was available for a month the teachers participated in two focus group discussions only. These teachers have all taught at the school since the school incorporated technology into the curriculum. The three Afrikaans FAL teachers, the one Sepedi FAL teacher and the technician worked in the same school environment and were able to answer the questions on the relevant technology in the FAL classrooms, the challenges that were faced with the integration of technology as well as the potential use of technology to address the individual needs of the learners (see Table 1.3). The technician's input was valuable for emerging technologies as well as the circumstances which are beneficial for effective technology integration.

Table 1.3: *Composition of the focus group discussion – First Additional Language teachers and technician*

	Teacher 2	Teacher 3	Teacher 4	Technician
Position held at the school	Teacher	Subject Head: Sepedi	Deputy-Principal	Information Technology Specialist
Teaching				
Subject at the school	Afrikaans FAL	Sepedi FAL	Afrikaans FAL	Information and communications Technician
Experience (years)	7	30	30	8
Experience at the school (years)	7	10	9	8
Qualifications	B Ed	MA in African Languages	MA Languages	A+ N+ MCSC
Main specialisation subjects	Afrikaans	Sepedi	Afrikaans, Zulu	N/A
First Additional Language teaching experience (years)	7	30	30	N/A
Experience in teaching with technology (years)	7	13	9	N/A

The teachers are all highly qualified, extremely experienced and experts in their subjects. These teachers were essential in the study in providing knowledge of the content and pedagogy of the TPACK Framework. They also brought with them their experiences as they had all been involved in the initial integration of technology in the school. For the purposes of confidentiality the researcher referred to these teachers as teacher 1, 2, 3 and 4 and used the term technician to distinguish between the teachers and the technician. With the exception of teacher 3 who is a Sepedi FAL teacher, all the other teachers were in the Afrikaans Department. The teachers provided valuable input into the study, particularly in the focus group discussions.

The e-portfolios (consisting of five assignments) on *Turnitin* were used to investigate how *Turnitin* can be utilised to address every learner's individual writing need. *Turnitin* has a *Grade Mark* feature that can be of great assistance to the teacher to track the progress of the learners' writing in the Afrikaans FAL classroom. The *Grade Mark* option allows the electronic submission, marking and returning of work online, thus reducing the waste of paper. Doe (2013) notes that writing rubrics and evaluation tools are available on *Turnitin.* A major advantage of *Turnitin* is the fact that both the evaluation tools and the feedback may be modified by the instructor. The instructor is able to drag-and-drop the quick mark comments, the existing or modified rubrics or leave voice comments for the learners. Educational Testing Service e-rater technology is integrated with *Grade Mark* and identifies the errors in grammar such as spelling mistakes.

The researchers used ATLAS.ti to transcribe and analyse the data sources. The data analysis in this netnographic case study was primarily an inductive process where the data was coded, using open coding and in-vivo-coding. The qualitative data was electronically saved and transcribed. Member checks ensured that the information was verified by the participants. The aforementioned data collection documents are the primary documents and were uploaded into the hermeneutic unit of ATLAS.ti. Quotations were used to support reporting and these notions, for example, (P5:6) in which P5 means primary document number five and six means the number of that particular response. Thus (P5:6) means primary document five, response number six. The participants' names were not revealed for the sake of confidentiality. However, the participants were each assigned a number known only to the researchers. Learners used pseudonyms for the blogs because of the public domain and also to ensure that the learners give their honest opinions. The teachers' identities were also protected and the teachers were also provided numbers known only to the researchers. Themes related to the research question were identified and explored. The adapted conceptual framework was used as a lens to interpret the data sources and the findings are now presented under the headings of the technological knowledge (TK), the pedagogical knowledge (PK) and the technological, pedagogical and content knowledge (TPACK).

6. Findings

6.1 Technological knowledge (TK)

6.1.1 Theme 1: Fast-moving technological innovations

The integration of new technologies in the lessons was viewed as a very positive experience, as the learners found that technology "makes learning more interesting and fun" (P3:4). The findings indicated that the classroom environment had become more interesting and interactive with the introduction of technology as reflected in the following statement: "The environment in the Afrikaans class becomes more interesting and interactive with technology" (P21:66). In fact, almost all the learners preferred the lessons with new technology and described them "as more enjoyable and different" (P3:13). This is evident in the following statement made by one of the teachers: "Our learners are digital these days, they use technology and thrive on it. It is the biggest motivator if it is used in class" (P21:12). In addition, they were motivated to speak in Afrikaans and this enhances their use of Afrikaans vocabulary and sentence structures. One learner commented: "It is enjoyable to chat in a chatroom with friends to learn how to speak Afrikaans in a new fun way" (P20:8). Technology has transformed socialising and learners are texting more now than engaging in face-to-face interactions. Learners have consequently learnt the skills needed to express their emotions and feelings via social media. One learner stated in this regard: "Yes people have become very opinionated. Technology gives us a platform to express your opinion therefore increasing our ability to write persuasive" (P6:19). Golonka et al. (2014) acknowledge the positive effect of social media on language learning, as it provides increased access to target language input and immediate feedback in a natural relaxed environment. It also enhances the skill to reason and give your opinion.

6.1.2 Theme 2: Speed and ease of technology

The error identification and corrections may be customised on *Turnitin*; this facility makes the assessment of the written assignments much easier and faster for the teacher. Most of the learners found that technology helps tremendously with the identification and correction of errors. Learners also preferred to write essays on their laptops because they could be given their word count, it was easy to correct mistakes and it was very convenient to email the work directly to the teacher or upload it on the system. In the main, the learners perceived the use of *Turnitin* to be helpful and beneficial. One learner reported: "This was a very cool experience because it gave us individual feedback on the essay we did and the areas in which we could improve on and I thought this was really helpful and since our marks and the comments were posted online it is easy for us to easily access it and refer back to our mistakes so that we can know where we went wrong and how we can correct our mistakes" (P20:161).

From the interviews and the focus group discussions, the learners and the teachers also indicated that they regarded the time-saving component of technology as important. One learner noted that using technology is time efficient (P20:95). The use of the learning

management system (LMS)[3] helped with the communication of work-related activities to the learners, while it also helped teachers both to organise course content and interact with multiple learners. The learners stated that they enjoyed working with the *Turnitin* software because "it makes the submission and feedback of work easier and more effective" (P3:13). They also reported that they appreciated the proof of submission provided by Turnitin software when a writing assignment had been uploaded and that this helped to avoid confusion about submissions of assignments between learners and teacher.

The learners reported the "available resources to access with the use of technology" (P11:12) helped them with homework assignments. They highlighted the availability of "technicians to help" (P14:15) them in case of a technical problem. They also mentioned their laptops and cell phones that they used to search for information. The learners stated that one of the most important advantages of technology integration in a classroom was the easy access to worldwide information on the internet. The learners were able to search for additional information on a given topic discussed in the Afrikaans FAL class while they could also broaden their knowledge and acquire extra information to help them to understand the work better in Afrikaans FAL, as revealed by this comment in the interview: "It provides access to different way in which things are done, for example, to search for more work done on a topic will give you more knowledge from different perspectives, thus improving all that you would know on that topic. Technology enables us to find out what we don't know and what we want to know at that very time" (P11:21).

6.2 Pedagogical knowledge (PK)

6.2.1 Theme 3: Transformation of teaching and learning

The teachers in the focus group discussions reported that teaching with technology enhances teaching (P21:2) and learners and teachers agreed that technology can be used successfully with creative written tasks (P21:67) and enhances all writing exercises, especially as far as the spelling of words is concerned.

The learners felt that technology help them to be more organised (P12:9) and "it is a more effective way of getting things done" (P17:34) than may otherwise have been the case and that this resulted in more confidence. One learner reported: "It gives some people more confidence in the work that they are doing" (P9:1). The learners also felt that they were being catered for individually. Some of the learners appreciated the visual learning that technology brings into the classroom. Learners in this century are constantly listening to music and they tend to prefer audio assignments or audio feedback from the teacher. The instructor (teacher) is able to leave individualised voice comments for the learners and no microphone is needed to record the message on *Turnitin*.

3 It is a software application for the administration, documentation, reporting and delivery of electronic content. It is a platform where content can be uploaded and distributed to the learners and other teachers.

The teacher asked the learners to use earphones in the class and each learner listened to her individual comment. The learners reported that the incorporation of audio and visual images in lessons made the lessons "more interesting and fun" (P3:4). Technology develops not only different modes of learning (e.g. visual, audio) but forces learners to integrate these modes so that multi-modality becomes the norm rather than the exception. One learner reported that she prefers to use different modes because she shows herself "in a different light" (P20:117). One learner stated: "It was very helpful to see how much you understand on your own and to see how you can actually understand more than you think you can" (P20:99).

The learners reported that the class atmosphere was more "relaxed and flexible" (P21:86), that they "laugh more" (P20:17) and that it was "more sociable in an education sense" (P10:3) in class. According to Vygotsky (1978), learners learn from capable peers. The use of the discussion board on *Turnitin* puts the learners in a virtual world that acts as the Zone of Proximal Development (Vygotsky, 1978), enables the learners to feel free to learn from each other because everyone shared their mistakes, and they learnt from each other (Umstead, 2013). More interactive learning took place with the integration of *Turnitin* with learners being able to ask questions to either one of other learners or of the teacher on the discussion board. This study showed that the learners learnt from each other by interacting, sharing their mistakes with each other and helping each other to correct their mistakes.

6.3 Technological, pedagogical and content knowledge (TPACK)

6.3.1 Theme 4: Individualised feedback

The learners appreciated the individual feedback that they were receiving via *Turnitin* and felt it helped them to learn from their mistakes. In addition, it also directed them to improve on their errors and to learn from their mistakes which led to deep learning because they were constantly actively engaged with the content. The majority of the learners felt that their individual written needs were being met by the easy identification of errors and the individualised feedback of *Turnitin*. One learner even said:"When technology integration in the classroom is seamless and thoughtful, students not only become more engaged, they begin to take more control over their own learning, too" (P9:37).

The participants clearly appreciated the fact that *Turnitin* enabled them to identify and correct their mistakes easily. In particular, the learners appreciated the colourful, personal and individual feedback via *Turnitin* because they could learn from their mistakes and experienced that there was a focused personal relationship with the teacher.

The use of *Turnitin* has given rise to a different method of communication and has resulted in spontaneous collaboration between all participants interacting in the target language on the discussion board of Turnitin. As advocated by Krashen (1982), this interaction in the target language leads to language acquisition while the new knowledge is created within a social constructivist environment (Vygotsky, 1978). The written CF starts an iterative cycle of review and contribution.

Effective teaching and learning with technology occur at the point of equilibrium at which pedagogy, content and technology meet. In addition, the integration of *Turnitin* software in second language writing assignments provides a platform for individual and self-directed learning. By actively engaging in their individual WCF, learners reflect on their individual mistakes and learn from these mistakes. Thus, learners take ownership of their own learning which results in self-directed learning. Self-directed learning leads to the high self-esteem which encourages language learning (Krashen, 1982). Technology enforces active participation on the part of the learners and this leads to a deeper understanding of the content of their writing. Learners integrate the language aspect of second language learning in their creative writing, thus making it more meaningful to them.

7. Conclusion

From this study it seems that the basis of sound second language writing with technology is the application of sound pedagogical techniques and using the most appropriate technology to teach writing that is authentic and meaningful to the learners. This inquiry revealed that learners experience educational value from the integration of technology in writing. Technology, such as the internet, laptops, cellphones and more specifically *Turnitin* explored in this study, can be utilised to address the individual writing needs of learners in a second language classroom. *Turnitin* can transform both an FAL teacher's teaching and the FAL writing classroom. Through active engagement with the content of their written pieces, learners integrate the language rules from the quick mark comments in their writing, thus making it more meaningful and constructive. It is evident that learners want to use technology for educational purposes. Technology adds to FAL learning, making it enjoyable, different and interesting. Engagement with written, corrective feedback is required to enable learners to engage with the content and to make it meaningful to them. This will encourage learners to take ownership of their writing while instilling the self-discipline which is needed in this digital society in which learners are able to obtain any information anytime and anywhere.

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