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The use of digital storytelling in the teaching of reading at a rural primary school

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Abstract

The myriad challenges confronting schools have stimulated proposals to adopt digital storytelling as both an innovative teaching strategy and learning resource. Due to inadequacy in reading skills of our school learners, language teachers have acceded to a proposal to use digital storytelling as a vehicle for curriculum delivery. Therefore, the purpose of this study is to examine the perceptions of the rural primary school teachers regarding the use of digital storytelling in the teaching of reading. To do so, the researcher employed a three-cyclical process of qualitative action research which involved pre-implementation, implementation and post-implementation stages. To gather data from five language teachers, interviews were used during pre-implementation phase, observations were conducted during the implementation phase, and document analysis and interviews were employed during the post-implementation phase. Results show that the teachers' readiness levels in terms of technological skills, beliefs and attitude improved after attending the Digital Storytelling Workshop. The notable end-product of the Digital Storytelling Workshop was three digital stories that teachers developed by teachers. In sum, teachers demonstrated an adequate degree of readiness to adopt digital storytelling after the post-implementation phase. The positive outcomes of this action research study suggest that digital storytelling should be used as an innovative strategy to teach reading.

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1. Introduction

One of the gravest ills characterising the South African education system is the inadequate reading skills of many learners, especially in the intermediate phase. The Department of Basic Education (DBE) acknowledged this malady when was responding to the findings of The Progress in International Reading

Literacy Study (PIRLS) (Moloi & Chetty, 2017). Despite all the efforts by the DBE, The PIRLS' study found that Grade 4 learners still face challenges with their cognitive levels of literacy (they can't read) (Mullis, Martin, Foy, & Hooper, 2017). Even the reginal study conducted by the Southern and Eastern Africa Monitoring Consortium for Monitoring Education Quality (Moloi & Chetty, 2017) corroborated the findings of PIRLS. The results showed that the performance of South African learners in reading is below SACMEQ IV's average score. The challenge of having learners without a proper reading skill implies that learners cannot achieve satisfactory in all subjects because "being able to read has great impact on learning and achievement in every area of the curriculum" (Yusuf & Enesi, 2011).

The acquisition and improvement of knowledge in various subjects depend on extensive reading (Zhang, 2018). Without a good reading, student intellect cannot be developed (Yang, Kuo, Ji, & McTigue, 2018). Thus, Mikulecky (2008) defines reading as "a conscious and unconscious thinking process where the reader applies some strategies to understand the meaning which the author intends to convey through his writing." Zhang, Zhao, and Wang (2020) define reading as a "process of understanding, comprehension, absorbing, appreciating, evaluating and exploring reading materials". Therefore, it has become even more critical for all subject teachers to apply strategies that cultivate their learners' reading habits or skills in order to succeed academically.

However, good readers read with comprehension. Roit (2005) asserts that "Good readers do more than read words … good readers read with comprehension." Comprehension is "the process of simultaneously extracting and constructing meaning through interaction and involvement with the written text" (Snow, 2002). As a product of reading a written text, comprehension can be configured as the process of making sense of words. Constructing meaning is at the core of comprehension. For learners to achieve comprehension, the teacher should adopt innovative teaching techniques that can ensure that learners master comprehension strategies. Digital storytelling continues to emerge as one of the innovative teaching strategies of the 21st century (Mirza, 2020).

Smeda, Dakich, and Sharda (2014) correctly argue that digital storytelling is "one of the innovative pedagogical approaches that can engage students in deep and meaningful learning". In the same vein, Chubko (2020) explains that the multimodal nature of the digital storytelling has the potential to be used to create an authentic learning context for all students, regardless of their background. The idea of multimodality is supported by Robin (2016) who refines digital storytelling as the art of telling a short story using a mixture of different digital media that includes written text, images, audio and videos. Arroba and Acosta (2021) add that digital storytelling is a specific mode of using technology with textual characteristics. Therefore, it is the combination of the written text with various multimedia tools that encourages engagement (Robin, 2006).

The engagement element of digital storytelling makes it a suitable pedagogical tool to enhance the language skills of learners or their reading skills by encouraging them to use their imagination and creativity (Nassim, 2018). Previous studies revealed that digital storytelling contributed to the development of digital, global, technological, visual, and knowledge literacy (Çetin, 2021) critical thinking and problem-solving skills (Chen & Chuang, 2021) creativity and critical thinking (Anggeraini, 2020; Tabieh, Al-Hileh, Abu Afifa, & Abuzagha, 2021) research skills (Çiçek, 2018) and integration skills (Kabaran, Karalar, Altan, & Altıntaş, 2019). The combination of these skills is commonly regarded as the 21st Century Skills by other scholars. The 21st Century Skills or Digital Age Literacies are being described in the literature as the combination of several literacies (Robin, 2015) which include digital, technological and visual literacies.

The profitability of digital storytelling to develop these skills makes it a critical tool that can simplify the introduction of the new content and to ensure that students become fascinated by new ideas presented in the lesson, capturing the learners' attention in the process. Taking into cognisance the host of skills digital storytelling can develop, it is easy to argue that its integration into curriculum can help learners to comprehend difficult material (Hibbing & Rankin-Erickson, 2003). Therefore, integrating a written text with audio-visual resources can effectively assist learners with comprehension. Salkhord, Gorjian, and Pazhakh (2013) also assert that digital storytelling has effects on reading comprehension. The greatest benefit of teaching through multimedia-rich digital stories is that it does not only improve reading and writing (Alismail, 2015; Anggeraini & Afifah, 2017) but also assist both the teachers and learners acquire digital, technological and visual literacies.

Another benefit of digital storytelling is that it can also develop the teachers' "Technological Pedagogical Content Knowledge (TPACK)" (Dewi, 2016; Mishra & Koehler, 2006). The TPACK framework is "The basis of good teaching with technology and requires an understanding of the representation of concepts using technologies, pedagogical techniques that use technologies in constructive ways to teach content" (Mishra & Koehler, 2006). TPACK refers to "what should be known by the teachers to be able to integrate technology in learning and how to integrate into learning" (Dewi, 2016). Therefore, several researchers have used this framework to assess the readiness of teachers to integrate digital technology into school curriculum.

While the benefits of digital storytelling abound, there are however revelations from previous studies that the use of digital storytelling for teaching purposes can be threatened by several factors. Sadik (2008) states that although it is important to integrate technology such as digital storytelling into the curriculum, teachers are required to possess technical expertise to ensure that technology is effectively and meaningfully used in

the classroom. Generally, teachers face several barriers when integrating digital storytelling into their classrooms. These barriers include lack of access to technology, teacher's belief about the usefulness of and difficulty associated with the integration of technology, little time available to plan for technology integration and lack of effective professional development program for teachers (Kopcha, 2012; Wachira & Keengwe, 2011; Waller & Maxwell, 2017). These barriers influence the teachers' decision to use digital technologies.

Therefore, the examination of teachers' readiness before a new technological approach is introduced is necessary (Jwaifell, Abu-Omar, & Al-Tarawneh, 2018). Frameworks such as TPACK and Technology Readiness Index (TRI) were previously used to assess the teachers' readiness to integrate new teaching strategies, with the TRI being the most preferred framework to evaluate the teachers' readiness to adopt and use technological tools (Parasuraman & Colby, 2015). The TRI framework consists of four key dimensions to assess mental state of teachers to integrate technological tool into the curriculum. These dimensions are optimism, innovativeness, discomfort and insecurity. Optimism and innovativeness are generally considered as enablers of ICT integration into teaching while discomfort and insecurity are viewed as inhibitors of technology integration (Mwapwele, Marais, Dlamini, & Van Biljon, 2019). TRI framework is useful to this study because language teachers who are optimistic about the use of digital storytelling can easily adapt it in the delivery of curriculum.

1.1. Research Context and Problem

The setting of this study is our primary school located in the rural community within Bolobedu South in Tzaneen Circuit, Mopani West District. This primary school is a quintile 3 school that serves 490 black learners across the three phases (foundation, intermediate and senior). It consists of 13 teachers and 1 Grade R practitioner. At the end of 2019, the school was declared 'underperforming' by the district. Using literacy as a proxy, the district found that majority of our learners in the intermediate phase achieved below 60% in Home Language (Sepedi) and First Additional Language (English). As a principal of this school, I also noticed that indeed there were inadequate reading skills among learners in the intermediate phase. In my classroom observations, I realised that the reading problem is caused by a lack of proper or innovative pedagogical strategy and the absence of proper reading strategies in classes (Amoush, 2012).

Guided by Smeda et al. (2014) study findings that demonstrates the usefulness of digital storytelling as an innovative approach in teaching, I proposed the use of digital storytelling to teach reading. Since our language teachers have also been concerned about poor reading, they became more eager to find out more about the digital storytelling. The persuasion to adopt digital storytelling was also triggered by the findings of several studies that affirmed that digital storytelling could improve the reading comprehension of learners (Alkhlili, 2018; Hamdy, 2017; Tsou, Wang, & Tzeng, 2006). However, like many other digital tools, the process of integrating digital storytelling into teaching is complex. It is against this background that this study first examined the teachers' initial views or perceptions of digital storytelling. This examination focused the teachers' readiness in terms of their skills and attitudes required to integrate digital storytelling. This is because despite being exposed to projectors, laptops, and digital cameras, there is still a higher number of teachers who are not ready to incorporate technological tools into the curriculum or do not know how to integrate educational technology into the curriculum" (Mwapwele et al., 2019; Townsend, 2017). Since our teachers were not exposed before to meaningful and effective training on technology-aided approaches, the state of the teachers' readiness informed the development of a workshop with tailor-made activities to adequately prepare teachers to adopt and use digital storytelling. It was hoped that through the digital storytelling activities teachers would gain experience about digital storytelling both theoretically and practically.

1.2. The Purpose of the Study

The purpose of this action research study is to examine rural primary school teachers' perceptions regarding the use of digital storytelling in the teaching of reading.

1.3. Research Questions

This study is guided by the following research questions: "*What are the perceptions of teachers regarding the use of digital storytelling as a new pedagogy for teaching reading?*" This central research question is further divided into three sub-questions to focus data collection process:

a. How do teachers perceive their readiness to adopt and use digital storytelling in the teaching of reading?
b. How do teachers perceive the common barriers to digital storytelling integration?
c. To what extent did the digital storytelling workshop change the teachers' perceptions regarding the use of digital storytelling?

2. Methodology

To fully answer the research question in this study, action research design was adopted. Action research is widely acknowledged as an effective "tool of curriculum development used for the study of local problems to

guide, correct, and evaluate education decision and actions" (Hopkins & Antes, 1990). Thus, the use of participatory action research allowed the school to develop, analyse and implement their school improvement strategies to improve reading (Herr & Anderson, 2005).

2.1. Research Procedures

The implementation of this action research was guided by key frameworks developed by several researchers and scholars in various fields (Kemmis & McTaggart, 2008; Lewin, 1946). All these frameworks demonstrate that action research is a continuous process that involves non-linear stages or phases. Thus, this study utilized three-step action research involving the pre-implementation phase (planning phase), implementation (action/observing) phase and post-implementation phase (evaluation/reflection). The point of departure was a vigorous review of literature which assisted in defining the question or problem, deciding on data collection and making an action plan (Andrew & Johnson, 2012).

During the pre-implementation phase, the main activity was to collect data using semi-structured interviews. The interviews were used to elicit views and opinion of the language teachers (Creswell, 2014). In this study, the teachers were asked questions that challenged them to reflect on their capabilities, skills and attitudes required to integrate digital storytelling into the teaching of reading. They were also asked for perceived barriers to digital storytelling integration. The interviews are guided by an interview schedule. The interview data guided the development of the Digital Storytelling Workshop (implementation phase). Since digital storytelling is a relatively new educational tool proposed for the teaching of reading comprehension in our school, teachers were engaged in various hands-on activities during the workshop. Ørngreen and Levinsen (2017) state that "A workshop with hands-on activities in a safe environment can help bring technology into play." The key activity was the creation of three digital stories. This activity was captured on a video and observed by the researcher and two education assistants.

This qualitative action research concludes with document analysis and semi-structured interviews (post-implementation phase). During this phase, the main document analysed was the digital storytelling rubric. This helped the researcher to evaluate the quality of the digital stories and to determine whether the teachers are technically ready to implement digital storytelling. Data from multiple sources were analysed. A process-coding technique was used throughout the data analysis process which took place throughout the three phases of the action research (Saldana, 2015). Data gathered through interviews, observations and document supplement each other as part of the data analysis process. The video-recorded workshop and interviews are presented for transcription. Then, themes and sub-themes are identified, interpreted and classified according to the research sub-questions (Burns, 2010).

2.2. Participants

The participants of this study were 5 language teachers teaching English and Sepedi in the intermediate phase. These participants possessed varying demographical characteristics including their age (20-60 years old), teaching experience (2-24 years), gender (3 males and 2 females) and Information and Communication Technologies (ICTs) qualification or training. Thus, they were able to contribute useful insights to the phenomenon under study. The participants' demographics were also helpful to understand reasons why particular attitudes and beliefs were evident in participants. For example, why novice teachers were a bit positive about the new approach compared to veteran teachers.

3. Results and Discussion

In this study, the interviews were conducted and analysed before the intervention or implementation of action as well as post the intervention. Basically, the interviews sought to examine the teachers' readiness to adopt and use digital storytelling to teach reading in the classroom. Teachers' readiness indicators involved the teachers' skills, experiences, beliefs and attitudes (Kopcha, 2012). The next sections present and discuss the findings of this study.

3.1. Teachers' Beliefs and Attitudes towards the use of Digital Storytelling

The teachers' belief is a major factor that can affect the teachers' readiness to integrate a new pedagogical tool such as digital storytelling (Champa, Rochsantiningsih, & Kristiana, 2019). From the result of the interviews, all teachers believe that adopting and using digital storytelling is the right thing to do. One participant explained, "*There is no escape, technology has become an integral part of our lives. It affects everything we do, at home and work. Yes, my attitude towards technology is positive.*" Another participant said "*"I think technology is useful and it can help kids in the 4th Industrial Revolution. Once you put something technological, they listen.*" When asked specifically how he perceived the use of digital storytelling in the teaching, one participant indicated that "Digital storytelling can be productive and interesting. It can help one to understand and relate to the story."

Generally, the language teachers believed that digital stories could maximise the teaching and learning of reading. The teachers accept the idea of using digital storytelling because of its productivity and effectiveness in improving the concentration levels of learners as well as enhancing their visualising and prediction strategies as compared to the traditional approach. Although the teachers' positive belief was not based on

their previous experience of using digital stories, it could be concluded from the results of the interviews that the teachers' attitudes towards digital storytelling are positive. However, the results show that the positive attitude alone is not enough to efficiently use digital storytelling. In addition to their beliefs and attitudes, the efficient use of digital storytelling would depend on the teachers' levels of knowledge and skills.

3.2. Teachers' Digital Technology Knowledge

Through the interviews conducted before the Digital Storytelling Workshop, it emerged that teachers' skills and experiences to adopt and use digital were insufficient. While three teachers were exposed to digital technologies or tools before, none of them used these tools to present lessons in the classrooms. Only one teacher had experience in using PowerPoint presentations for personal use, not for lesson presentation. Thus, one participant who has over 20 years experience of teaching English said "*My experiences of using digital technologies is limited as I have not acquired any professional training in this regard. I seldom integrate my teaching with digital technology.*" He added that ""*This can be attributed to my limited knowledge of technology.*" In terms of teachers' technology knowledge before the intervention, teachers were not ready to use digital storytelling.

The teachers' incompetence or limited knowledge before the workshop emerged as a factor that affects the teachers' confidence to lead technological innovation in their schools. According to the Technology Readiness Index (TRI), innovativeness refers to actions such as willingness to use new technologies when introduced in a school context. Innovative teachers are also prepared to offer technical support to other teachers (Ifenthaler & Schweinbenz, 2013). However, after attending the Digital Storytelling Workshop, teachers' knowledge improved as one participant state, "*I am ready as now I can set up technological equipment such as data projectors. I was not able to do this before. I am ready to adopt and use digital storytelling in teaching because I can develop my storyboard, use digital tools such as Cyberlink and PowerPoint to create a story.*" The analysis of the digital story evaluation rubric to assess the quality of digital stories created by teachers confirms that teachers have acquired new skills that are needed to create a digital story.

3.3. Constraints of Using Digital Storytelling

All the participants shared several threats to digital storytelling integration into the teaching of reading.

3.3.1. Teachers' Insufficiency of Digital Skills

The obvious impediment threatening the use of digital storytelling was the teachers' insufficient skills and experience. This is evident in this participant's remarks, "*For me, the biggest factor is lack of technological skills and expertise. I seldom use technological devices to teach.*" The teachers' insufficiency of digital skills is due to a lack of professional development training. This has been mentioned as a barrier to integrating digital storytelling in the teaching and learning process, particularly in the teaching of reading. Even one teacher who attended the ICT workshop indicated that the workshop lacked connection with the actual classroom practices.

3.3.2. Lack of Access to Limited Technological Resources

In addition to limited digital skills, access to limited technological resources was mentioned by teachers as a serious threat to the integration of digital storytelling. This factor is expressed by this participant saying ""*I have not used technology in my teaching because the available technological resources are not available to all of us. Only a few teachers have access to them. There are also limited …* "Another participant adds "*Lack of resources and lack of interest in technology by learners and teachers in our school is a big factor.*" Lack of access also meant that teachers do not have time to learn how various technological resources are used. Goktas, Yildirim, and Yildirim (2009) research findings support this when they found that lack of software was one of the barriers to integrating ICT in teaching and learning.

3.3.3. Teachers' Workload

The teachers' workload, though not prominently featuring, prevented teachers from exploring the available resources. Teachers felt that teaching many classes, coupled with administrative duties consumes most time leaving teachers with little time to prepare reading lessons based on technology. A participant who is also an ICT Support Officer in the school state that "*The workload prevents me from using technology to teach. Preparing a lesson with technology requires time. So, it is impossible to prepare when you have a lot of periods in a day coupled with other administrative duties.*" Likewise, another language teacher said that "*I can use digital technologies because I don't think I have a skill and time to do so.*"

3.4. Considerations for Adopting Digital Storytelling in Teaching Reading

While the Digital Storytelling Workshop seems to have adequately prepared teachers to adopt digital storytelling, the findings reveal several considerations for successful digital storytelling integration into the teaching of reading.

3.4.1. Offer Continuous Professional Development Training for Teachers

While the implementation of the Digital Storytelling Workshop in this study adequately equipped teachers with the necessary skills to use digital storytelling, teachers proposed that school should continue to provide teachers with ICT training. One participant stated that, "*The world of technology is dynamic. New technologies are continually introduced. So, we also need to be continually trained to be kept abreast with new tools to create digital stories. More training sessions and more practice on how to do digital storytelling using different tools such as Movie Maker will adequately prepare me to integrate.*" The world is moving very fast and for teachers to dance with that pace they need a continuous training on how new technological tools can be used to develop digital stories. Accordingly, Simsek (2020) reported that the use of digital stories should not be limited to one-off courses in teacher training programs.

The professional development should cover the development of storyboards and the exploration of new digital tools or software for creating digital stories and the understanding of ICT devices. Prioritisation of teacher training to integrate digital storytelling recommended by several scholars and researchers (Ifenthaler & Schweinbenz, 2013; Kopcha, 2012). Teacher training should be designed to equip teachers with a skill of selecting and aligning appropriate ICT resources or tools with their pedagogy to teach prescribed content effectively. Therefore, deepening the teachers' understanding of ICT resources and their practical applications in the classroom can help them not only to develop digital stories but also to use them to teach reading.

3.4.2. Provision of Technological Resources

The lack of digital resources (hardware and software) negatively affects the integration of digital storytelling. Teachers consider that the school should address the problem of limited digital or technological resources. One participant said "*I think one of the factors that can affect the implementation of digital stories is the lack of required software that work effectively and the latest hardware. During the workshop, we were using free tools and have limitations. So, the school should at least buy tools with full features.*" Free software used during the workshop seemed to limit teachers' creativity. Another issue regarding effective integration of digital storytelling relates to human resource.

3.4.3. Reduction of Teachers' Workload

Teachers proposed that, in addition to purchasing additional ICT resources, the school should consider employing full-time laboratory assistants who will offer technical support to teachers. This participant accentuated "*The other support I need is technological support by hiring an ICT support staff in the laboratory.*" In addition, another participant proposes that "*Also, hire a computer lab specialist to help us with the setting up of equipment so that we don't spend time doing it ourselves.*" Hiring laboratory assistants will not only offer teachers' technical support but I will also reduce the teachers' workload by setting up projectors and screens for showcasing the teachers' digital stories.

4. Conclusion

The main motivation of the language teachers who participated in this action research was to learn how to use digital storytelling to teach reading in their classrooms. The type of the digital stories they created were to teach (instruct) or inform learners (Robin, 2015). Unlike other digital storytelling projects which focused on applying quantitative methods to determine the effect of digital stories on reading comprehension, this project is sought to examine the perceptions of teachers and develop tailor-made training (workshop) to equip teachers with necessary skills to use digital storytelling. While working on this project, the language teachers focused on creating storyboards, locating relevant resources (images) online, recording narration using their cellphones or computer microphone and using technology tools or programs (Cyberlink) to create and share digital stories. However, the teachers were not expected to write scripts (written text) as the project made use of already written story (Betty Botta). Notably, creation of storyboard was a nightmare to teachers. Thus, the continuous training should emphasise the creation of storyboard.

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