Integrating Apps for English Teaching and Learning

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Abstract

Learners of today are more technologically advanced than ever before. They live their lives with technology at their fingertips. Not only do today's young people own multiple technology devices, they use them constantly in their day-to-day lives. The task for teachers today is a stronger focus on successfully integrating technology into the curriculum, but this has posed a number of challenges, not only because some teachers are not technologically competent, but also because the focus has remained on technology and not on pedagogy. One of the aims of the South African curriculum for English is for learners to achieve communicative competence and produce grammatically correct and contextually appropriate sentences in different situations. Moreover, learners should also become technologically proficient in line with the changing needs of society. This article reports on research conducted with the aim of sourcing and evaluating Android Apps for use in the English classroom. It offers a narrative of the process undertaken and explores the benefits of using Apps in the English classroom to promote communicative competence. The qualitative research was framed within the social constructivist theory and based on the principles of Participatory Research and Action (PRA) and the Technological Pedagogical Content Knowledge (TPACK) framework. Fourteen (14) pre-service teachers studying English Methodology were purposively selected to source and evaluate Apps for teaching and learning in the English classroom. The participants collaborated online to sift through applicable Apps and develop interactive lessons using these Apps. Data from pre- and post-intervention workshops and focus group interviews were thematically and inductively analysed and mapped against the four components of communicative

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competence, namely grammatical, strategic, socio-linguistic and discourse competence. This was done to determine participants' perceptions and experiences when integrating technology in lessons and the extent to which communicative competence was achieved through these Apps. The outcomes will help pre-service teachers develop and improve their own teaching practices by experiencing integrating technology into the teaching of English, but more importantly to improve their own communicative competence and that of their learners.

Keywords: Apps, Communicative Competence, Community of Inquiry, English second language, technology integration, TPACK

1. Introduction and Context

In the South African context, the learning of English as a second language and as Language of Learning and Teaching (LoLT) is a complex issue, often fraught with difficulty. Learners are not only hindered by their own low level of English language skills, but also by those of their teachers (De Jager 2012). Teachers' general competence in the language of instruction, their knowledge about the language and how they speak the language are crucial issues which could influence the effectiveness of their teaching and the learners' understanding of new content. Whereas the curriculum envisages high levels of proficiency in First Additional Language (FAL) (or the second language), what the learners acquire is, unfortunately, nothing close to the expected degree of language and communicative competence in English, and so also do pre-service teachers at tertiary level struggle with academic texts, both in written form and orally (Hugo & Nieman 2010). Where basic interpersonal communication skills (BICS) (Cummins 1981) are achieved, cognitive academic language proficiency (CALP) (Cummins 1981) is not, and their communicative competence is inadequate.

The lack of adequately proficient teachers who teach through the medium of English has been named as one of the major barriers to effective learning (Heugh 2009; Alexander 1997). According to The National Teacher Education Audit conducted by Hofmeyr and Hall (1996), the majority of teachers in South Africa are underqualified or not qualified to teach. In addition to this, it seems as if teachers have limited oral proficiency in English, they

lack the skills to teach English as a second language and do not possess the knowledge to teach in a bilingual/multilingual education context. The impact on learners in schools learning English as a second language is dire, even though one of the requirements in the Curriculum and Assessment Policy Statement (CAPS) for English is communicative competence (DBE 2011).

As a further challenge, the use of technology in schools, as mandated by policy (DoE 2004), has not been as effective as had been hoped. Not only are teachers mandated by policy (DoE 2004) to nurture technology competences in their learners, but teachers also need to develop these competences in themselves. This jump to the technological era has not been as intuitive and natural for teachers as it has been for young people and has even created a fear and reluctance to introduce technology in their classrooms (De Jager 2014). The task of successfully integrating technology into the curriculum raises a number of questions, among others about the role of technology in the classroom and the benefits of using Apps in the classroom. The aim of this research was to explore how Apps can be integrated successfully to enhance learning in the English classroom, as well as improve communicative competence.

The increasing concern about the extent to which pre-service teachers struggle with mastering English and how they would teach the subject when placed in schools, coupled with the importance of teaching pre-service teachers not only what technology is, but also how to integrate technology into the English classroom, lie at the heart of the research reported on this article. The research is an intervention on technology integration where pre-service teachers are required to use technological and pedagogical content knowledge (TPACK) as a framework to develop interactive English lessons. The aim was to determine ways to promote technology activities in the English classroom as a vehicle for improving communicative competence and oral proficiency. Using technology, specifically Android Apps, in the English classroom could close the gap between traditional methods of teaching languages and the way in which technologically intelligent learners learn a language. In the process transformed practice (Janks 2010), and learner success may be achieved. The following research question guided the research: 'How does the integration of technology in the English lesson transform practice?'

2. Review of the Literature

Since the aim of this research was to develop pre-service teachers' own learn-

ning in English and also their pedagogical knowledge of teaching English by incorporating Android Apps into the instructional design of lessons, the review of the literature covered the areas of second language teaching and learning, which has as its main focus communicative competence (CC) (Hymes 1966), pedagogical content knowledge (PCK) (Shulman 1986), and the resultant technological pedagogical content knowledge (TPACK) (Mishra & Koehler 2006). The review of the literature also covered social constructivism (Vygotsky 1978), which formed the foundation for the conceptual framework.

2.1 Communicative Competence

The term 'communicative competence' was developed by Hymes (1966) in response to Chomsky's (1965) linguistic theory of grammatical competence. Hymes counteracted Chomsky's theory because it focused on the speaker's ability to produce grammatically correct sentences, disregarding context and socio-cultural aspects of language use. Hymes claims that '[a] person who chooses occasions and sentences suitably, but is master only of fully grammatical sentences, is at best a bit odd' (Hymes 1966:60). To Hymes, communicative competence accounts for the knowledge of using language competently and appropriately in a speech community. Hymes (1966:60) asserts that,

> [w]e have then to account for the fact that a normal child acquires knowledge of sentences, not only as grammatical, but also as appropriate. He acquires competence as when to speak, when not, and as to what to talk about with whom, when, where, in what manner.

Thus, language speakers should not only have the ability to produce grammatically correct sentences, but they should produce contextually appropriate sentences (Rickheit & Strohner 2008). This points to the two most important criteria of communicative competence, i.e. effectiveness and appropriateness (Rickheit & Strohner 2008).

The key aspects included in communicative competence are knowing how to use language for a range of different purposes and functions, how to vary our use of language according to the setting and the participants (e.g. knowing when to use formal and informal speech or when to use language appropriately for written as opposed to spoken communication), how to produce and understand different types of texts (e.g. narratives, reports, inter-

views, conversations), and how to maintain communication despite having limitations in one's language knowledge (e.g. using different communication strategies) (Richards 2006).

Communicative competence includes four distinct competences, which are grammatical, strategic, discourse, and sociolinguistic competence, and assumes that 'communicative competence is the highest or broadest level of language competence that can be distinguished or that is relevant to second language teaching' (Canale & Swain 1980:7). In that sense, communicative competence should be considered central to teaching a language, and that formed the crux of this research.

Larsen-Freeman and Long (1991:7) also raise important points for language teachers in the sense that learners should be prepared in and taught the FAL so that they can use it for a variety of purposes and in different situations. Most importantly, the FAL is a LoLT and learners should be able to use it while learning other subjects. Learners acquire language for a variety of reasons and communicative competence can mean different things to different people (Savignon 2017). The latter has implications for teaching, because it is essential that teachers understand the underlying purpose of FAL learning. Their understanding will promote, to a greater extent, successful integration of technology into language teaching for effective communicative competence.

2.2. Technological Pedagogical Content Knowledge (TPACK)

When the idea of PCK as the missing paradigm in the research on teacher knowledge was introduced, it was described as one of several knowledge bases needed by teachers (Berry, Friedrichsen & Loughran 2015). The idea that teachers hold a unique knowledge base, distinct from experts in the discipline that they teach, caught the attention of many researchers who explored how teachers understand the content and combined this knowledge with pedagogical strategies and knowledge of learners in order to plan and deliver instructtion (Berry et al. 2015).

Pedagogical content knowledge (PCK) refers to the fact that teachers need more than content knowledge to teach their subject; they also need pedagogical knowledge (Shulman 1986). Turnuklu & Yesildere (2007:1) claim that PCK comprises three interrelated components: knowledge of content, knowledge of the curriculum and knowledge of teaching. Content or subject knowledge is a substantial part of teachers' responsibility and they themselves

should at least be knowledgeable if they are to impart knowledge to their learners. Thus, PCK refers to subject matter, subject knowledge and academic knowledge, and according to Solis (2009:1), 'craft knowledge'. Without this knowledge teachers may not be able to offer quality teaching in the classroom and impart knowledge as expected. PCK allows the teacher to transform their content knowledge into pedagogically powerful forms, but that are adaptive to the variations in ability and background presented by learners (Evens, Elen & Depaepe 2015; Deng 2018).

With the advances made in using technology, Mishra and Koehler (2006) provided the technological pedagogical content knowledge (TPACK) framework for identifying the nature of knowledge required by teachers for the integration of technology in their teaching. TPACK is an extension of Shulman's (1986) idea of PCK. Effective integration of technology around specific subject matter requires the development of an understanding of the transactional relationship between the three components of knowledge as they function in particular contexts (Mishra & Koehler 2006).

To meet the challenges of the knowledge economy, teachers are under pressure to design lessons that engage learners in the exploitation of information and communications technology (ICT) for problem solving, collaboration, and knowledge construction (Koh et al. 2015). To develop learners' 21st-century competencies, teachers need to consider how technological pedagogical content knowledge (TPACK) can be applied through design-thinking processes.

The increasing availability of user-friendly and interactive technology makes the delivery of knowledge in all areas of professional competency both pedagogically effective and practically expedient. The use of blogs, video conference and chat tools (both synchronous and asynchronous) makes possible anytime, anyplace communication. Furthermore, the online environment enables the building of a community of learning well beyond that of the traditional classroom. Through the use of such communication platforms, there is potential for a wider sharing of ideas and practices. It is important, however, that integration of technology remains focused on good pedagogical principles and not solely on the technology.

2.3. Conceptual Framework

This research was informed by the theory of social constructivism, developed

by Vygotsky (1978). In social constructivism, knowledge is actively constructed by means of collaborative learning and teaching for meaning and understanding (Crotty 2012:1). Table 1 unpacks social constructivism according to the Graduate Student Instructor Teaching and Resource Centre Home (GSI) (2005:1).

Table 1: Social constructivism

Social constructivism	
View of knowledge	Knowledge is constructed within social contexts through interactions with a knowledge community.
View of learning	Integration of learners into a knowledge community. Collaborative assimilation and accommodation of new information.
View of motivation	Intrinsic and extrinsic. Learning goals and motives are determined both by learners and extrinsic rewards provided by the knowledge community.
Implications for teaching	Collaborative learning is facilitated and guided by the teacher. Group work.

The use of terms such as 'social, collaborative, integration' and 'interaction' in the model above, suggests the importance of learning 'in a social setting'. As such, communication and collaboration with others, in written and spoken forms, become vital to effective learning. Vygotsky views 'the sociocultural context of learning as a socially constructed, mediated process' (Jordaan 2011:13). Therefore, this research works from the premise that communicative competence is integrated within the social constructivist ambit due to the construction of knowledge through interactions within the social context.

The conceptual framework for the research emanated from areas of second language teaching and learning, which has, as its main focus, communicative competence (CC) (Hymes 1966), and technological pedagogical content knowledge (TPACK) (Mishra & Koehler 2006). The principles of the Community of Inquiry Framework (Garison 2015; Garrison & Arbaugh 2007) were also employed for the methodology of the research, since participants would be collaborating online. Figure 1 shows the conceptual framework used

to guide the research. As is indicated in Figure 1, the research was conducted in the iterative cycles of action research, specifically in this instance, PRA, using the TPACK framework as guide. The research was done in an online collaborative environment, following the Community of Inquiry Framework. The purpose of these cycles was to enhance communicative competence. Although the conceptual framework is situated within the broader area of multiliteracies, this article will not report on that aspect as multiliteracies is not the focus of this article. However, I have indicated it here, since the aspect of transformation in practice was one of the aims of the research.

Key: COI (T=teaching presence; C=cognitive presence; S=social presence)
TPACK (P = pedagogy; C = content; T = technology)

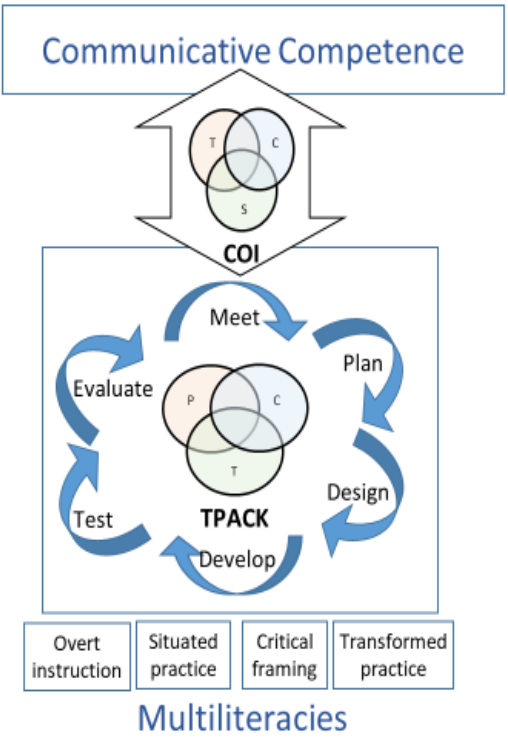

Figure 1: Conceptual framework

3. Research Design

An interpretivist lens as metatheory was adopted (Creswell 2013; Patton 2002) utilising a qualitative approach (Denzin & Lincoln 2000; Creswell 2014). The research was framed within action research, specifically participatory reflection and action (PRA) (Chambers 2012; Ferreira & Ebersöhn 2012; Fraser et al. 2016) where pre-service teachers reflect on their own practice, take actions to transform their practice and reflect on the successes or challenges, then repeat the cycle if required. PRA is closely related to Participatory Action Research (PAR) and as a result, one could then claim that PRA would have similar properties due to its reflective and action-based qualities. PRA provides a strategy with dual research and developmental qualities that would possibly strengthen the development of pre-service teachers' ability to integrate technology. The original PRA model of Von Maltzahn and Van der Riet (2006) – which they phrased Participatory Rural Appraisal – served such a purpose (Fraser *et al.* 2016a). This methodology made it possible to gain an in-depth understanding of the perceptions and views of the pre-service student teachers. The pre-service teachers further conducted their research within the Community of Inquiry framework (Garison 2015; Garrison & Arbaugh 2007) that proposes online collaboration to deliver a particular product, in this case interactive English lessons.

From a population of 45 pre-service teachers enrolled for the Postgraduate Certificate in Education (PGCE), and enrolled for the module Methodology of English, 13 agreed to participate. Each participant was provided with a Lenovo 4 tablet and linked to a Google team drive. They collaborated online in a dedicated module created for them on the institution's Blackboard learning management system. They created discussion threads and replied to these to help one another choose the most applicable Apps for their teaching purpose and phase/grade. They shared resources and ideas with the rest of the group. I acted as monitor and facilitator.

3.1 Data Collection

Qualitative data were collected through five phases of the research:

Phase 1: Pre-intervention PRA workshop to determine participants' knowledge, perceptions and understanding of using technology in the classroom. Participants indicated their perceptions and understanding of the

use of technology in the design of lessons divided into level of expertise, current use, and perceptions for use for teaching.

Phase 2: Pre-intervention training workshop with participants. A training workshop of three hours was conducted with participants where they were trained in the principles of TPACK and the SAMR model. They were also shown how to do a basic search on the tablets and which aspects to look out for, among others, developer name, size, reviews, and so on. The process that was developed for the sourcing and evaluating of Apps included the following steps:

1) Search terms
2) Pre-evaluate the App
3) Download the App
4) Do a quality scan (basic)
5) Serious play with App
6) Check requirements according to criteria
7) Apply
8) Share

The criteria used to evaluate the Apps were also discussed at length with participants and covered the following areas:

1) Basic information
2) Content and pedagogical domain
3) Curriculum and contextual aspects
4) Deeper evaluation according to Bloom/SAMR
5) Problems/mistakes in App

(For more information on the process and
criteria for evaluation, see,
Phase 3: Research, selection and evaluation).

Participants were afforded the opportunity to practice a search for an App on their tablets and to discuss what they had found with the rest of the participants. These Apps were evaluated to show the participants what to look out for.

Phase 3: Research, selection and evaluation. The research phase comprised two actions, namely searching for Apps and then evaluating these against set criteria provided to the participants. Based on their evaluations, participants could do further searches. The initial search and evaluation was a general search through the many available Apps in the play store on an Android device. We searched with only a few criteria in mind, among others that the app had to be free, it had to be interesting/exciting, and it had to deal with a particular aspect of the English school curriculum. It could be any type, such as a game, a study App, or a practice App.

Participants collaborated with members of their community online and discussed the various Apps they identified. They reached consensus on the most applicable and relevant Apps to teach an aspect of language or literature. Participants identified the 10 best Apps evaluated using three broad criteria, namely general information, subject-specific evaluations and scaled information. The Curriculum and Assessment Policy Statement (CAPS) provided the key areas to be emphasised in the teaching of English as an Additional Language. Using the CAPS document, participants determined the App's alignment and usefulness in terms of improving learner's ability to listen and speak; read and view; write and present and use language structure and conventions appropriately. The specific curriculum needs which the App could address were evaluated in terms of the phase and grade which had been identified as the possible benefactors of the App. In addition, the App was evaluated for what it did, how it worked and the activities that the user was involved in while using the App. The next level of evaluation was the description of the content of the App as it relates to the CAPS content areas. The App's intended audience was rated as for learners, teacher or both. The App's type was reviewed in terms of being a passive, practise, problem-solving, puzzle, quiz drill, simulation and social media tool. At the same time, the App's content was evaluated in terms of text, summary/facts, video, photos, diagrams/figures or film. The App's assessment options were rated in terms of assessment, assessment/feedback or none. The participants also determined the App's potential in developing the user's language competence.

The App was also evaluated in terms of its ease of use, which referred to the evaluator's experience as they installed and opened it; this section was rated as easy, moderate and difficult. The App's size was captured in megabytes and its availability was explained in terms of offline, partly offline, need data (online) and online. The App's cost was captured as free, limited

version free and purchase. In-Apps purchase advertisements were considered in the evaluation and were rated as no advertisements, in-App advertisement OK and in-App advertisement intrusive. The App's support function was evaluated as tutorial, help included and online support. We were also interested in the App's latest update to evaluate its content relevance to the intended phase and grade.

We further evaluated the App's potential to enhance subject specific content areas. The subject specific evaluation for English was based on the App's ability to enhance the subject teaching and learning, methodological enhancement and sociolinguistics. The subject specific evaluation used an open ended answering format.

The evaluation also included a scaled information section. The scaled information evaluation was done using a Likert scale of 1 to 4. The verbal interpretation for the scale was 4 – excellent; 3 – good; 2 – fair and 1 –poor. The Apps were scaled in terms of Overall App rating, Academic App rating, Interactive App rating and Content.

Participants were required to upload their Apps as well as the evaluations for these Apps onto the Blackboard module to share with all the other participants (see Addendum A for a list of all the Apps identified and used by participants).

Phase 4: Intervention. After having evaluated the Apps, participants designed an interactive English language or literature lesson, using of at least two of their chosen Apps. The interactive lessons needed to have as its aim the enhancement of communicative competence. The lessons were all developed using an intersecting diagram indicating pedagogical content knowledge (PCK) and technology (PCK+T). PCK is a crucial component for the implementation of technology-integrated lessons, and for the achievement of communicative competence (CC). Without PCK teachers may not be able to offer quality teaching in the classroom and impart knowledge as expected. The activities that were designed around the Apps had to improve the learners' proficiency in the English language and assist with mastering certain content areas of English, as stipulated in the CAPS document.

The lessons were uploaded onto the Blackboard module for critique and discussion by the co-participants. The participants then presented their lessons during their official Work Integrated Learning period at the schools at which they were placed. Participants were required to spend some time online

again in collaboration with their co-participants to reflect on the successes and failures of their lessons and the relevance and applicability of their Apps used.

Phase 5: PRA reflection workshop. The reflection phase was conducted in the form of a group interview where pre-service teachers reflected on their actions and spoke about their experiences and thoughts on the integration of Apps in their teaching. The focus was on participants' experiences in terms of planning (training workshop), actual actions (intervention) and new actions (adaptations and improvements after reflections) for future implementation. The participants were asked to what extent their use of Apps promoted communicative competence and to what extent their own teaching practice had been transformed by the research.

The collected data thus consisted of the following five data sets: PRA pre-intervention workshop (participants' perceptions and understanding before the research commenced), the discussion threads they created online, lesson plans integrating Apps, the group interviews after the completion of the research and their reflections on whether their practice was transformed (PRA post-intervention workshop).

Throughout the research, I adhered to the guidelines for conducting ethical research (Ethics certificate number: UP 18/08/01) and aimed to obtain valid and trustworthy findings.

3.2 Data Analysis

For data analysis I used inductive, thematic analysis. Firstly, the data generated by the phase 1 PRA workshop were coded, categorised and scrutinised for themes. This determined the extent of phase 2 and the planning of the intervention. The next step was to code and categorise the data generated through the discussion forums on Blackboard, and the interactive lessons designed by the participants. The emerging themes were noted and scrutinised to determine to what extent participants planned activities in their English classrooms with the aim of enhancing communicative competence. This was measured against the four communicative competencies, namely grammatical, strategic, discourse and socio-linguistic competence. The focus-group interviews were then coded and categorised, then inductively and thematically analysed. Lastly, the data from the phase 5 PRA workshop, namely the participants' reflections, were also inductively and thematically analysed to deter-

mine to what extent the participants' practice was transformed.

4. Findings and Discussion

At the start of the research, participants claimed technological competence ranging from intermediate to advanced, and all emphasised the importance of teaching with technology. However, they all admitted that they had never considered using Apps for teaching, but used Apps only for social purposes, such as Twitter and Instagram.

Participant 7 explained:

> *To me, I only used apps for Social Media and then the Blackboard App - I used that quite a lot. If an App doesn't work better than a website, then I delete the App. So, for example the library App – if you use the website, it is just as good, so I don't use the App as much. I would rather go on my laptop and use the website because I prefer working on a computer.*

Participant 2 agreed and said:

> *I hadn't ever thought about using Apps in the classroom - or anything other than the stock standard PowerPoint*.

Participants regarded their limited competency in technology as the main barrier to integrating technology into their instructional design. Participant 1 stated:

> *I am always too unsure to really figure it out, so I stick to interesting PowerPoints and videos. If I can see examples of how to do it, I will try it. But time is a problem.*

Most participants lamented the limited time to experiment with new technology and felt overwhelmed and concerned that they were already falling behind with technological developments. In this regard, Participant 7 stated:

> *The kids in school know much more than I do!*

At the end of the research, a wide range of educational and generic Apps, study Apps, summarising Apps and gaming Apps for the teaching of English were identified across the phases (Intermediate to Further Education and Training) (see addendum A). These Apps acted as a vehicle that enhanced the interactive nature of instructional design. Participants mainly used generic Apps (such as Kahoot! and Qizzes) for informal assessment and subject-specific Apps (such as Refrigerator Poetry and Johnny Grammar English) for teaching and learning opportunities. In some instances, participants adapted the sourced App for a specific purpose. Participant 2 said an App was '*too wordy*'. Participant 6 said the App was '*too advanced, too difficult for my learners, so I had to change some of the words*'. Participant 3 said that she had found a good App, but then copied the information onto a worksheet, thus reverting to traditional methods of teaching. In this way the activity was not interactive.

Ultimately, the participants claimed that the research aided in the development of their pedagogical planning. They were much more aware of the level of planning it took to design effective lessons, particularly when integrating technology. Participant 13 said:

> *I definitely do more research now when I am looking at downloading an App. I don't just download it because I have heard about it and it sounded interesting, I actually do go and read what it is actually about. And if there is a webpage linked to the App then I do just go and peruse to see if it is actually something that would work for me.*

However, although participants followed the TPACK framework, they admitted to not checking their planning against the SAMR model for technology integration. This could be the reason why many of the lessons, although making use of Apps, seemed to remain on the level of substitution on SAMR. This is a common challenge and emphasises the need for a stronger focus on pedagogy, and not merely on technology.

With the onset of Covid-19 and the resultant focus on technology and connectivity, it is not enough to merely include technology, or make technology available. Considering the pedagogical aspects of good instructional design should always be at the forefront of planning quality teaching and learning opportunities. Although this research assisted the participants in navigating online knowledge resources in the form of Apps, their focus remained, to a large extent, on the App and not the pedagogy of how to use the App in their

teaching. Participants acknowledged that this was lacking in their implementation, which means that in future they would probably be aware of this and take it into account.

Participant 4 said:

> *I never thought to check against Bloom, I was just so happy to have found a good App*.

When the participants were asked how they planned the instructional event, Participant 6 said:

> *… more for assessment and ones for content, but I found the content Apps were … not concise enough, and the ones that were super concise were too concise and didn't give enough information. So I felt, myself, more inclined to use Apps for assessment or activity purposes rather than for content specific.*

Participant 11 responded as follows:

> *So, it is an App that you open and it is like a textbook … I took information from them and made them into worksheets.*

The participants also claimed that their own English language use was enhanced. Moreover, apart from assisting learners to improve their communicative competence, participants stated that their own communicative competence improved greatly, since they themselves had to play and work through the Apps, thereby learning not only the content of the subject but also coming to a better understanding of the strategic competencies required for communicative competence. This, they claimed, brought a new understanding and has had a positive and transformative effect on their teaching practice. During the last phase (Reflection) however, in response to probing questions, it became clear that participants did not fully understand the components of communicative competence and assumed it to imply proficiency in grammar only. Participant 4 said:

> *There were a couple of them that dealt specifically with grammar rules and those were really nice to do a little worksheet for kids using that*.

Although an increased understanding of communicative competence was evident, most participants focused on grammatical competence only, as is shown in the choice of Apps chosen.

An appropriate definition of communicative competence requires an understanding of the sociocultural contexts of language use and the selection of a methodology appropriate to the sociocultural differences in styles of learning. For language teaching to represent true change – not only in theory but also in classroom practice – a reform of goals, materials, and assessment is insufficient (Savignon 2017). Attention needs to focus on increased opportunities for teachers to experience and practice ways of integrating communicative experiences into their lessons for learners to promote and sustain collaboration, innovation, and change (Savignon 2017). As such, communicative competence is seen as a goal of 21st-century second language teaching and learning for shaping classroom practice in the many different contexts in which English is taught.

The participants in this research displayed such an understanding. It was evident from how their perceptions had changed from Phase 1 to Phase 5 of the research. Initially they stated that technology use was for social activities and would not necessarily change their teaching philosophy. As they progressed through the phases of the research, an increased focus on the pedagogy required to design effective lessons was evident. Their initial selection of Apps was based on the fun factor, and often the first Apps that were listed in a search were used. Later on they became more selective and their explanations for discarding a particular App showed an elevated understanding of PCK and TPACK. One participant indicated that she chose to teach from a genre-based approach, thinking that communicative competence would follow once the learners grasped the language structures used in that particular genre. She said:

> *I taught them a newspaper article and they had to use correct language in the article. They wrote good sentences (P9).*

When analysing the online threads among participants, the exchanges seemed to play a role in participants' own second language development. The different styles in their threads very interestingly illustrated how culture was embedded in discourse competence, because they had to find ways not only to interpret the content of what their co-participants were saying, but also to infer

the pragmatic meaning. This is in line with Chun (2011:392), who states that learners employ different discourse styles in their online postings as they seek to understand the discourse genres of their peers.

Adopting the Community of Inquiry Framework ensured that participants' learning became self-correcting. The online collaborative nature of the research made it possible for misconceptions in knowledge and thinking to surface, allowing the group to help in their correction. This is in line with what Garison (2015) states about learning becoming a transformative and ongoing collaborative activity. It was particularly rewarding to see the more reserved participants become more vocal in the online discussions, also providing assistance and resources to the group.

Many studies show that the integration of technology in educational practice is a complex innovation for teachers. Teachers have difficulty in integrating technology in their instructional processes. Therefore, even when the technology applications have proven to be effective in isolation, it does not always imply that the same effects are realised in natural educational settings. Using the TPACK framework allowed participants to move beyond over-simplified approaches that treat technology as an add-on. Instead, it allowed them to focus on the connections among technology, content, and pedagogy as they play out in the English classroom. About using the TPACK framework, Participant 11 said, '*This really helped me think about my planning*', and Participant 6 said, '*I have never seen this framework before, it is great. I will use it again'*. The importance and value of integrating technological, pedagogical and content knowledge and skill into the instructional design during pre-service education is clear. Not focusing on all three components will lead to isolated and unexploited opportunities in the classroom, resulting in a reverting to traditional teaching methods and seeing technology as an add-on or substitute.

As the presence and use of technology in classrooms continues to grow, teachers need to design technology-rich learning experiences for learners and they need the skills and knowledge to be effective in technology prolific environments (Olofson, Swallow & Neumann 2016). The TPACK framework as a conceptual tool was highly effective in this regard. As with pedagogical content knowledge (PCK), TPACK was shown to be a powerful instrument to identify the knowledge and skills teachers needed to design lessons for 21st century classrooms. It is exactly the intersection of technology, pedagogy, and content that provides the type of flexible knowledge required to integrate

technology effectively for teaching in the 21st century. Similar to what Chai et al. (2019) found, the intervention in this research enhanced the participants' TPACK efficacies and their design beliefs significantly.

During the post-intervention interviews, the participants showed transformed practice because of a realisation that the successful integration of technology in the teaching of English was only possible if the following strategies were adhered to:

a) thorough planning and preparation;
b) pedagogically reliable and learner-centred technology integration in the classroom – technology should enrich the teacher's lessons, not replace them;
c) technology being used in tandem with curriculum and national aims and outcomes and not in isolation;
d) collaboration (whether online or not).

As stated at the beginning of this article, the aim of this research was to promote technology integration activities in the English classroom. More importantly, the article serves as an example of how communicative competence can be enhanced through the use of Apps. However, even though there are many attractive and useful Apps available for use in the classroom, many pre-service teachers do not have the knowledge required for implementing these in their lessons. Without the requisite knowledge, communicative competence, as advocated in the CAPS document, may not be achieved. The findings indicate that if teachers were to employ technology in the classroom by thorough planning against a framework such as TPACK, they could move beyond the non-technological, traditional way of teaching to include more creative and innovative ways of planning lessons with technology, thus teaching in a way that learners of today find accessible, enriching and enjoyable.

5. Limitations of the Research

Due to the small number of participants, the findings cannot be generalised. Implementing another cycle of PRA could have shed more light on the findings, especially in terms of transformed practice. However, the findings do contribute to a raised awareness among participants about the benefits of

integrating technology, specifically Apps, and using TPACK as a framework for instructional planning.

6. Future Research

Future research promoting the integration of Apps for developing communicative competence in the classroom should focus on pre-service teachers. Professional development to foster TPACK growth among teacher educators is essential and requires policies that facilitate pre-service teachers' experimentation with domain specific technologies. Research on the effectiveness of interventions for developing teacher TPACK can contribute to the knowledge base. It would be beneficial to begin with technologies that are deemed important and effective before introducing additional forms of technology that focus on developing communicative competence. In today's ever changing and uncertain times, learners deserve to be taught more than content knowledge, and different pedagogies will have to be investigated and employed to adequately prepare learners for the world of work. Learning the second language requires a competence in the pragmatic aspects of the language and communicative competence should be an overt aim of language teachers. Future research projects on how to use technology, such as Apps, for language learning and teaching need to be explored further and should examine the efficacy of different technological tools in language education. Research exploring how to use technology to introduce novel types of learning activities through collaboration activities can help broaden the knowledge base on ways in which technology can support practices that foster deeper student learning. The next step would be to create dedicated Apps to bridge language barriers in line with projects by the South African Centre for Digital Language Resources (SADiLAR).

7. Conclusion

Technology can be the change agent that will take the language classroom into a new direction of learning a language and transform the teaching practice of pre-service teachers. Participants indicated transformed thinking in instructional design and although not fully fledged, these are the first steps which may lead to transformed practice. Participants were able to develop and improve their use of technology, thereby experiencing the benefits of inte-

grating technology into the teaching of English directly. Participants indicated that in the process of evaluating and selecting appropriate Apps for their teaching, they also improved their own understanding and language proficiency, thereby improving their own communicative competence. From the findings, it is clear that it is not about the technology in instructional design, it is about the pedagogy. What is potentially new and transformative about integrating Apps in instructional design is a change from didactic pedagogy to reflexive pedagogy. This could help teachers to move beyond the idea of 'teaching through glass' (my own phrase), where the technology is merely used as a substitute for a textbook. I foresee that the outcomes of this research will have value for both lecturers and pre-service teachers, and may potentially inform future technology activities, thus supporting student learning and development.

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Addendum A: List of Apps identified and evaluated by participants

App:	Comments:	Score (5):
Edmodo	Variety of learning options Direct contact with teachers Organises due dates for tests/assignments.	4.2
Poll Everywhere	Live interactive audience participation. Useful for large classrooms/audiences.	3.5
Office Lens	Scanner App Allows user to take a photo of a piece of paper/white board, the App crops the image to look like a document.	4.8
Kahoot!	Uses games to teach learners various concepts School/ Work/ Home.	4.2
Classtools.net - Fakebook	Uses a Facebook-like interface to create fake profiles of fictional people Used to teach history.	4.1

Agenda – a new take on notes	Organising/Calendar tool Similar to Google Calendar, but includes note taking capabilities.	4.6
Quizlet	Quiz App. Makes use of flash cards to assist in learning Foreign languages/Math.	4.7
miMind – easy mind mapping	Mind mapping App Has various mind map options. Uses user information.	4.7
Travefy	Used to create itineraries Can feed App data, or import existing information.	4.4
EspressoEnglish	Website for quick English lessons. Introductory e-books available for free Daily lessons also available, at a cost.	4.2
Onlinequizcreator.com		4.6
Kids Geography – Let's Learn		3.9
Word snake	Players can choose which language they want to play in Provides players with a word that they need to spell using random letters given.	4.3
Write As	Online blog posts Anonymous entries/updates to existing Write As blogs Personal blogs can also be uploaded.	4.3
Remind.com	Organisation tool Used to keep track of assignments at school/work Two-way messaging, allowing both students and parents to be aware of everything going on at school.	3.8

Comic and meme creator	Large gallery of images provided Used to create custom comic strips or memes.	4.3
Socrative	Instant feedback App. Quizzes or pre-prepared tests can be used. Teacher receives graphs on the students participation/understanding.	4.2
Google Classroom	Create online forums. Create, distribute, and grade assignments. Streamline the process of sharing files with curriculum, news, lessons between teachers and learners	4.0
Quizizz	Used to create quizzes for students Connected to Apps like Twitter and Google Classroom Teachers can create and upload their own quizzes.	4.7
English media lab	Free English exercises Puzzles/Vocabulary tests/Daily exercises.	3.8
Litcharts	Summaries of relevant literary works, notes on 1153 books.	4.0
Canva	Graphic design App – flyers, logos and posters. Plenty stock photos available Users can upload their own.	4.7
16 Personalities	Asks a series of questions to determine the user's personality. Used to assist in learning/study methods. Users can also use the information provided to read up on various personalities and traits.	4.0

MindMeister	Online mind-mapping tool. Useful for brainstorming, note taking and planning	4.5
Grammar smash English	Fast-paced game for improving grammar	4.6
Abcya.com	Mini-games for learning parts of speech. The tests are given in the form of 'quests', having users play out various scenarios	4.2
Animaker	DIY video animation software. Cloud based, allows users to create animated videos using pre-built characters and templates.	3.9
Book creator	Simple tool to create e-books on iPad, Chromebooks and the web.	4.1
Grammarly	Digital writing tool using artificial intelligence and natural language processing.	4.3
Blackout Bard	Used to create Blackout, aka Erasure, poetry which consists of selecting words from a block of text.	3.5
Phonto	Simple App that allows users to add text to pictures.	4.8
Myheritage	Online genealogy platform with web, mobile, and software products. 'Build your own family tree!'	4.4
WeBlogit	Allows users to create daily blogs about various topics – either personal or educational.	4.4
Vocapture	Offline English dictionary.	4.2
StoryboardThat	Used to create online classes with pre-built models. Tells a story by using characters and speech bubbles.	4.0

Logo Maker	Design logos for a business or event using a selection of icons, fonts, colours and text frames.	4.2
Camscanner	Uses a mobile device's camera to take a photo of a document and convert that image into an image scan.	4.8
ClassMarker	Create custom texts and exams online.	3.8
Madmagz	Madmagz is online software that enables anyone with basic internet knowledge to create with its team custom digital or print magazines.	3.6
Peergrade.io	Peergrade is a free, online platform to facilitate peer feedback sessions with students.	4.0
Test your English 3	This App is a study as well as a game App. Learners can use it to sharpen their English as well as revise work done in previous years. There are also some games to play. This App also teaches you what word in English to use in different circumstances	3.9
Quizlet	Learn languages with flashcards	4.0
WeBlogit	Blogging, writing App, also a website for creating memories	3.4
WeVideo	Video editor. Stock images, videos, templates, music and sound effects	3.8
Animoto	Create engaging web quality videos that include photos, video clips, text, and music	4.2

Class Dojo	Real time classroom management program to help learners stay alert and on task. Each learner is provided with an avatar. Teacher can instantly provide learner (and parents) with feedback	4.6
StoryJumper	Create collaborative texts and stories	3.8
Smart English speller	Practise spelling of English words	3.9
English Tracker	Exercises to learn English tenses and grammar	4.2
Johnny Grammar World Challenge	Grammar activities for English	4.0
Refrigerator Poetry	Create your own poems	4.6
English Figure of Speech	Learn all about English figures of speech.	4.4

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