Building Professional Competencies Through a Service Learning 'Gallery Walk' in Primary School Teacher Education

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This article reports on a service learning project in a South African primary school teacher education programme, as experiential and practice-based pedagogy in a social studies methods course. We aimed to broaden understanding of service learning as a form of non-placement work-integrated learning for the development of teacher professional competencies. Student teachers drew on topics in the middle school social studies curriculum and incorporated Indigenous geographical elements with local community history in the design of a service learning 'gallery walk' for Grade 5 learners. Using a generic qualitative design, data were generated from students' and teachers' reflective journals, lesson plans, photographs and video recordings. It was analysed for common content themes and prominent discourse markers of students' developing professional knowledge and competencies. The findings provide evidence of deepened student learning, particularly on the influence of context and curriculum differentiation and how their struggles with group work enabled the development of collaboration and co-operation required by professionals. In addition, the service learning prompted changing notions of citizenship and reciprocity of learning.

Keywords

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Introduction

The value of work-integrated learning is widely promoted for its practice-based benefits for students in many professional fields. There is however, growing recognition of the value of other forms of non-placement work-integrated learning to prepare students for practice and to help them develop the habits and minds of professionals. Professional education is particularly concerned with understanding how best to develop graduate competencies such as collaboration, critical thinking, communication, problem solving and active citizenship required in 21st century workplaces.

In teacher education, forms of non-placement work-integrated learning include service learning, micro-lessons and case-based simulations. In this paper, we argue for service learning as a way of developing specific teacher competencies. Many of these competencies are equally applicable to other professional fields, where students are training to work with clients, the public and in workplace teams. While the literature describes service learning as a philosophy, a method and a pedagogy, we regard it as a pedagogy, which expects students to draw on their academic content to offer service in response to community-identified needs, in a process that emphasises the reciprocity of learning by all parties (Clayton 2011). While research on the integration of service learning in teacher education highlights its numerous benefits, we find that there is insufficient theorisation of the process of learning through service as a form of non-placement work-integrated learning. In addition, there is scant attention to the role and place of reflection and the enhancement of reciprocity in service learning in professional education.

In South African teacher education, despite the acceptance of service learning as an important form of practical learning (Department of Higher Education & Training 2015), there is a paucity of research on how service learning influences the development of teacher competencies. Nor is there much research on how service learning can be incorporated into higher education methods courses for history and geography (Straus & Eckenrode 2014). Addressing student teachers' content knowledge and pedagogical repertoires during their training are vital in a country that regularly bemoans poor teacher knowledge and the dominance of passive educational methods (Spaull 2013; Tarling & Ng'ambi 2016). These are often blamed for poor learner achievement at school level. We were thus interested in how and why service learning as a non-placement form of work-integrated learning could broaden social studies student teachers' experiential learning opportunities and build the competencies required for professional practice. In particular we were interested in understanding its impact on the students developing pedagogical content knowledge and how other participants in the project would be affected.

A service learning gallery walk as a form of non-placement work-integrated learning in the preparation of teachers

In teacher education work-integrated learning in schools provides multiple benefits. School-based work integrated learning provides student teachers with opportunities to "explore, practise, reflect, experiment, trial and demonstrate many of the concepts taught at university" (Hudson & Hudson 2011, p. 321). It also affords them the conditions in which to engage in inquiry-based learning and so test the validity of theories (Korthagen 2011), build a community of practice (Schulz 2005) and create new knowledge derived from reflections on practice.

However, the literature is also replete with the challenges students experience during work-integrated learning at schools. It is criticised for being restrictive in nature and scope (Sullivan, in

Root 1994) with practical issues assuming most attention (Alexander, Muir & Chant 1992). Often students are assigned to one teacher, in a power-laden position as apprentices learning from the 'expert' (Binnaford & Hanson 1995; Root 1994). Tasks typically concentrate on honing teaching skills, with skilful techniques and use of technologies developing as habitual practices that require little thinking (Tabachnick, Popkewitz & Zeichner 1979-1980). A particular challenge is student teachers' struggles with enactment (Darling-Hammond 2006). This includes challenges of observing many children simultaneously, the skills to question learners effectively, stimulating discussions, and providing appropriate learner feedback. Social studies teacher educators are especially concerned with opportunities for students to learn about innovative pedagogies for promoting learner engagement (Sipress & Voelker 2009) and addressing learners' negative perceptions about social studies (Broom 2012).

In searching for ways of addressing these challenges, we used Furco's (1996) typology of experiential learning types and implemented service learning that was designed to operate as a form of non-placement work-integrated learning. The value of service learning for building graduate attributes and competencies has long been advocated in multiple disciplines (see Zlotkowski 1995). Disciplinary-specific research outlines concepts, models, theoretical frameworks and practical examples for a range of professional fields, including nursing (Norbeck, Connolly & Koerner 1998), planning and architecture (Hardin 2006), engineering (Tsang 1999) and management (Godfrey & Grasso 2000). We drew specifically on research in teacher education (Erickson & Anderson 1997), the pedagogy of which is recommended for its ability to engender social justice (Donahue, Fenner & Mitchell 2015) as a critical approach to teaching and research (Tapia 2003), and as a transformational tool for schools and communities (Boyle-Baise & Kilbane 2000). We also drew on our own history and research into service to teacher communities (Henning 2000). We found that service learning could help build a sense of social justice and care (Petersen & Henning 2018; Petersen 2007), promote collaborative learning and teamwork, enhance civic engagement and a connection to local issues and develop critical thinking (Petersen & Petker 2017).

In using service learning within a social studies methods course we focused on the development of a range of professional competencies. We wanted students to learn to become less dependent on lectures, textbook readings and memorisation of facts (Beck & Eno 2012; Cohen 2005) and adopt active pedagogical methods. They should learn how to incorporate local community issues into the curriculum as a way of stimulating learner interest (Crocco & Marino 2017), "ask probing questions, connect on an emotional level, and articulate understanding in a meaningful manner" (Beck & Eno 2012, p.78). We were also keen to address students' lack of subject content knowledge that directly impacts poor schooling outcomes, as shown in international benchmarking tests such as PIRLS (Howie et al. 2017).Then, in line with the tenets of reciprocity in service learning (Donahue, Bowyer & Rosenburg 2003), we also worked with the idea that the service learning project was more than a university-based service and learning opportunity for student teachers.

In customising the service learning project we drew conceptually on the ideas of a gallery walk as a general teaching strategy commonly used at school level. In higher education its versatility has been acknowledged in different disciplinary areas, such as political education (Karlsson 2019), science concept development (Au, Chimene & Kinikanwo-Samuel 2018), biology (Chin, Khor & Teh 2015) and geography (Francek 2006). Gallery walks are described as a form of active learning, in which learners or groups create and display presentations and artefacts with the opportunity of explaining and/or discussing these with others (Edel-Malizia 2015; Francek 2006). The idea of a 'gallery' is taken from the physical set-up (Francek 2006) that involves teams rotating from one station to the next to engage with, for example, artefacts, demonstrations or open-ended questions (Edel-Malizia 2015) and provide critique and assessment. It is also associated with the idea of an

'exhibition' in which students can, like artists, show their work and receive feedback (Namziandost et al. 2018). There are many advantages to utilising a gallery walk, for instance, in building learning communities, promoting learner and student participation through focused and targeted small group discussions (Sujannah & Utami 2017), and fostering creativity, confidence and enjoyment in the learning process in an environment that is not too formal (Bowman 2005).

Combining the pedagogical approaches of service learning and a gallery walk was our attempt at developing knowledge *of* and *for* teaching. We argue that knowledge developed in this kind of experiential practice allows students to become active contributors to their own and others' learning (Morton 1995) while also taking cognisance of knowledge and resources in communities beyond the university classroom. In such a model of educational dialogue, students learn how to talk with their peers and community in service of their academic learning. They are also learning in association with the very people they are 'serving' such as school learners and teachers. As such, we were of the view that if the school teachers could observe active teaching methods for the social sciences in action this would also be an effective means of in-service teacher development (Anderson, Reder & Simon 1996).

In this research, we make use of Schön's (1995) reflection-in action and reflection-on-action as a theoretical lens to understand how students develop teacher professional competencies. Reflection-in action is described as reflecting and acting 'in the moment' – this tends to happen when a lesson takes on an element of surprise or does not go according to plan. On the other hand, reflection-on-action is a process characterised by a student revisiting his/her actions to restructure the problem and then seek alternate solutions. Schön (1987, p.36) argues that the education of professionals like teachers, is best accomplished "in a context that approximates a practice world, (where) students learn by doing, although their doing usually falls short of real-world work. They learn by undertaking projects that simulate and simplify practice; or they take on real-world projects under close supervision". Combining the pedagogical approach of service learning with the set-up of a gallery walk offers students the opportunity to experiment, reflect in and on action to develop knowledge *of* and *for* teaching within a safe environment. In addition, through reflection on their service activities, the centrality of student experience is also acknowledged and students are validated as active contributors to their own learning and thus to the process of more authentic knowledge production for the profession.

Research methods

This study can be classified as a generic qualitative study (Merriam 1998) as we were interested in understanding the facets of students' and other participants' learning. We wanted to understand the detail of the process, that is, the how, where, when and why of participants' knowledge-making (Henning, Van Rensburg & Smit 2004). The following research question guided the study:

What is the influence of service learning as a form of non-placement work integrated learning on the development of student teacher professional competencies?

We briefly describe the programme and the setup of the gallery walk to provide context. The teacher education programmes in which this investigation was conducted preface the learning and development of children and operate in close cooperation with an affiliated teaching school (TS) (Gravett, Petersen & Petker 2014). Second-year social studies students (n=31) were directed to draw topics from the school curriculum and incorporate local community history and indigenous

geographical elements of the environment, such as the local 'koppies,'[1] in setting up their gallery walks on a section of the university campus. Owing to serious safety concerns in many South African communities we opted for a campus-based setting. It is however possible to use community locations and other field settings, such as museums and heritage sites (Ramsaroop 2017) for these activities. Working in groups of four, the students chose topics from the South African national school curriculum, for instance, "care for the environment" and "an appreciation of local history" (DBE 2011) for Grade 5 learners (ages 10-11) and their teachers from the TS. For history, the role of less well-known apartheid-era struggle icons such as Robert Sobukwe and T.W. Kambule, were highlighted. For the geography component, students made use of the wetlands and natural grassland vegetation in the greenbelt adjacent to the campus.

Each student group crafted individual stations in the gallery walk, and co-ordinated with the larger group to generate a coherent series of micro-lessons that would weave between the content areas of history and geography. Smaller groups of six to eight learners accompanied by their two Grade 5 teachers moved between the stations, giving each group the opportunity to present the same lesson four times, each time reflecting-in-action and improving the lesson/s, based on the learners' interaction and engagement with the artefacts at their station. In turn, all learners and teachers engaged with different topics in the school curriculum in one teaching episode. Figure 1 provides a schematic representation of the setup of the gallery walk.

Figure 1. *Physical arrangement of the gallery walk*
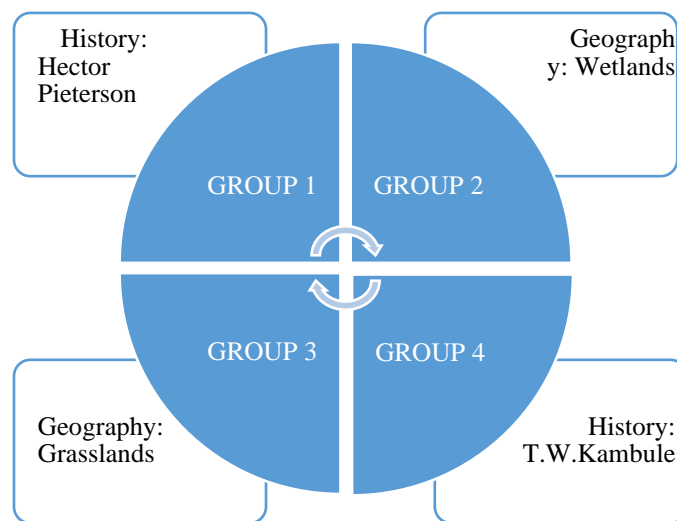
Data sources included student and teacher reflective journals, lesson plans, photographs and artefacts created by students. It also included video recordings and photographs of the learners and their teachers engaging in the activities at each station. The written data were analysed using a form of open coding (Babbie & Mouton 2015) and categorising (Merriam 2002) informed by our primary

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[1] A koppie is a small hill located in an area that is generally flat. Next to the campus is the Enoch Sontonga Koppie, named in honour of the composer of the first two stanzas of South Africa's anthem, "Nkosi sikelel' iAfrika". Enoch Sontonga lived in the area of Soweto, Johannesburg, where the campus is situated and common lore is that it was on this koppie that he penned the words used in the national anthem.

aim. For example, an excerpt from a student reflective journal: "*children ... learn best when they are involved rather than being told or explained to*" was highlighted and coded as 'gallery walk stimulated active learning'. In the process of analysis we assigned codes that stayed as close as possible in meaning to the data content. In the next stage we linked codes with those that dealt with similar issues so that we could begin establishing patterns across clusters. We paid particular attention to how this was linked to the development of students' subject content knowledge (Korthagen 2010), pedagogical content knowledge (Shulman 1987) and the facilitation of children's learning. For the visual data (photographs and videos) we used protocols suggested for qualitative data analysis by Henning et al. (2004), and checked these for correspondence, or not, with students' written comments. Photograph A, which depicts an experiment designed to demonstrate the water-holding capacity of nearby wetlands (pictured in Photograph B), is an example of this type of data (Figure 2).

Figure 2. *Data examples*

Photograph A   Photograph B

Findings

Overall, the data showed that the student teachers' professional competencies had been positively impacted by the service learning gallery walk. First, it had expanded students' pedagogical strategies for social studies teaching and deepened their reflections on the teaching, while encouraging reciprocity in the learning process. The service learning project also seems to have prompted them to change their ideas of what citizenship meant. Despite students' struggles with group work, by the end of the project they had also learned valuable lessons about collaboration and cooperation that are vital for teaching professionals.

Expanding pedagogical repertoires in learning to teach social studies

The majority of the students reported that the pedagogical elements of planning the gallery walk in a different setting was both challenging and stressful. Students, who were accustomed to *'planning lessons (for) inside the classroom,'* had the boundaries of their pedagogical repertoires stretched considerably. Most, however, acknowledged this discomfort as '*exciting'* as it prompted them '*to think out of the box … bring(ing) in new researched information*" and "*discover(ing) ways in which to use the teaching aids*" to teach outdoors.

Moving into a different physical setting enabled students to experience first-hand how the natural environment and local context of Soweto could be leveraged in their lessons to activate learners' prior knowledge and encourage engagement. It also helped students realise that the processes of their own teaching and of pupils' learning are complex and non-linear. They commented on the increased levels of learners' engagement and how they had "*to improvise, to be flexible, and proactive…*" in their pedagogical responses. Most South Africa schools to which students are assigned for work-integrated learning tend to reinforce traditional teaching methods that preface teacher talk (Tarling & Ng'ambi 2016) and the potential for student learning about strategies for increasing learner engagement are curtailed. The service learning gallery walk provided opportunities for students to contrast learners' reactions with what they observed during school based work-integrated learning and to make judgements about effective pedagogical techniques. A large number reported that learning outside, in the natural environment, *'awakens and energises learners … making (their) learning and understanding … much simpler*" and that it "*engage[s] (children) more actively in a lesson."* Also, the natural setting provided concrete objects that could ground the children's learning (see photograph B). One student, for instance, noted: "*I could see that most children find it easy to learn when they see something (like the koppies or the wetlands)."* There was also a feeling that the outdoor setting allowed for "*more engagement and interaction in their learning without any restrictions.*" In a country that struggles with the provision of teaching aids for classroom activities (Spaull 2013), students learned how to use what was freely available in the surrounding community to enhance their lessons.

Students' general pedagogical knowledge (Shulman 1987), particularly managing learner discipline, was also influenced. This is an area with which students' report struggling most during work-integrated learning (Darling-Hammond 2006). This is not something they could have learned under normal classroom conditions in which, owing to large classes, (between 35 and 45), learners usually work in strictly controlled classroom conditions. The activities in the gallery walk gave students a different experience of this aspect, as is evidenced by the following: *"discipline inside the classroom will differ from how you discipline outside when they are all hyperactive and having fun … It allowed me to…understand how learners behave in certain environments. Since we were teaching them outdoors, they were easily distracted and tend to be too excited and want to play.*" Students had to design interesting activities (see photograph A) to keep learners focused and they had to learn to manage outside distractions while teaching.

There is also ample evidence in the data that all the students believed that the experience of planning and executing the service learning gallery walk strengthened their understanding of developing differentiated pedagogical content knowledge for social studies. Here they began to see that both context and content is important, as evidenced in the following comments:

> *"Some pedagogies belong to a specific context…also that I have to be creative using them."*

> *"The gallery walk helped me to understand that most children prefer to work in groups if all members are active…it is called co-operative learning after all. Most children were concentrating and participating during the lesson because there were smaller groups. There are children that do not perform well in a crowd. Using different methods in your teaching can influence their learning process in a positive way."*

In addition, planning and executing the gallery walk seems to have brought university coursework and practice closer, and we felt that pre-service teachers were able to link the learning of new

methods to their knowledge of how children learn better. The integration of theory and practice is an issue of challenge for many professional degrees (Eraut 2004) and is an important part of developing integrated and nuanced pedagogical content knowledge in teacher education. Most significantly for us was that it emphasised the importance of depth and breadth of students' content knowledge. In a programme where we find it difficult to help students to take the development of adequate content knowledge seriously, this was an important breakthrough, as captured in the comment: "*I now have an idea of how content knowledge is important … So it is important to have a wide range of knowledge on what you are teaching.*"

Deepening reflection

Student teachers also reported learning more about techniques such as *reflection-in-action* and *reflection-on-action* (Schön 1995) to adapt or strengthen their pedagogy. Both forms of reflection are considered vital in developing student teachers' pedagogical content knowledge, and the design of the service learning gallery walk provided multiple opportunities for reflection-in-action in an authentic teaching situation. Our students had to learn to hone their observation skills and reflect in-the-moment in order to make judgements about adapting their lessons. For example, one student said: "*being able to adjust and being flexible to the needs of learners was the most interesting and challenging part*" and "*what works for one group of learners might not work with another.*" They also had to reflect critically on the often one-dimensional nature of their approaches:

> "*Sometimes how we imagine the lesson to be and what happens during the lesson may not be the same.*"

> "*... it taught me the ability to improvise due to the fact that we were teaching outside the classroom. This also helped as I also learnt that the teaching styles that you use in the classroom cannot all work outside hence as a teacher you must be flexible.*"

The small group format also provided opportunities for enhancement of reflection-on-action, as students could critically evaluate individual pupils' learning. As students noted: "*each of the learners had an opportunity to answer….we were also able to see who is answering well, who isn't, who understands, and who doesn't - which also gave us an opportunity to assist the learners individually.*" The incorporation of inclusive approaches to match the diversity of learners was something they could learn in action and transfer into the classroom environment.

Learning to work cooperatively

Students struggled to work as a group. The data were replete with evidence hereof: "*we all have different strategies of teaching, different ways of doing certain things and different thinking skills. The fact that we have to come up with one lesson plan created conflict.*"
It seems as if students struggled with listening to each other and considering alternative views. They complained that their peers "*did not want to hear other people's opinions because they think that the only correct information is the one they give out.*" In a professional field such as teaching, the importance of collaboration and co-operation is not easily learned during typical work-integrated learning placements when one student is assigned to a single mentor teacher. The service learning gallery walk provided ample opportunity for students to negotiate their differing levels of commitment and time management. Students reporting that peers: "*were not committed to their work,*" while "*others arrive late for planning sessions.*"

We feel that student teachers, as future professionals, need more opportunities to learn about cooperation and compromise. In our view the service learning gallery walk, in which students had to plan cooperatively for a group approach to teaching, was ideal for engendering the kind of dialogue that leads towards participatory modes of learning cultural and curricular democracy. In our view this develops "intellectual curiosity, scientific thinking, co-operative relations, social habits and self-discipline" that Dewey (in Shor 1992, p. 135) advocated as a benefit of experiential learning. The data provide evidence of student teachers, through their struggles, beginning to see the value of group work, as is evidenced in the following:

> *"learning how people see things, mash together new ideas and learn from each other"*
> *"reaching an extent that you wouldn't be able to on your own and this helps you develop for the future"*

A major part of the students' learning is that they had to "*learn to 'co-operate*", *"respect one another by taking work seriously"* and *"be considerate of other people's views and ideas even though I may not agree at all times.*" Student responses point to this: *"we all don't like working in groups but in order to finish the task at hand successfully we had to work together and assist each other in every way possible."* To us these are valuable learning experiences for student and key to the development of their personal and professional knowledge as teachers.

Service learning prompted changing notions of citizenship and reciprocity in learning

A less prominent, albeit important, theme in the data was that the teaching of topics in social science, history and geography, linked to the local environment of Soweto (refer to figure 1), seemed to prompt the development of a lived sense of citizenship and a greater understanding of the idea of reciprocity in the processes of serving and learning. With respect to the former, in the history component for instance, a student reported that

> "*the topics strengthened my own understanding of citizenship because it showed me the importance of knowing my country's history and different places around the country and passing that knowledge to the next generation so that they can know where they are coming from and what they can do better in their communities.*"

The geography component had a similar effect, with students arguing that it "*helped [them] understand the relationships between people and the natural environment. By having a better understanding of this helped me develop an appreciation of the environment.*"

For others, the localisation of the service and content seems to have engendered a greater appreciation of the local community landmarks, as well as a desire to see it preserved. For instance, students indicated that through the service learning they had "*a sense of belonging"* and "*knowing where you come from.*" One student, who had little knowledge of Soweto as she was from elsewhere in the country, explained how "*teaching about [the Soweto] wetlands made me feel like I am part of the Soweto community. It made me feel that sense of belonging like I am born here in Soweto."* There were also numerous references to how important it was to teach "*learners to know its [the natural environment's] importance and ways to conserve it.*" Here students expressed the view that it was their responsibility to encourage learners to be "*an agent of change as much as I*

am. Whatever they learn from me as a teacher, they can teach their parents and community. This way the community can protect and conserve the environment." These ideas are aptly captured by one of the student teachers, who commented: "*I got to learn more about my surrounding environment and its history which made me have a sense of respect for the people who have shaped this community to be what it is today.*" It also suggests that the service learning project broadened students' understanding of what citizenship entails:

> "*I learned that being a citizen is also being active in the community but not only on Mandela Day.*" [2]

> "*I now understand my responsibility as a South African citizen; that a citizen has to contribute in their country and you have to question what is happening in your country.*"

Then, as is fitting in service learning, the reciprocity and multi-directionality of the serving and learning emerged as well. Students were offering a service through the gallery walk, but were also learning more than we had anticipated. They acknowledged how the learners were teaching them in turn, as noted by one student's comments:

> "*The learners weren't just observing or answering questions ….but they were also asking questions and also commenting on what was being taught. It showed that they had prior knowledge of what we were teaching them.*"

> "*When I was busy teaching, I also learned something new from the learners… that most children find it easy to learn when they see something.*"

The two Grade 5 teachers also commented on what they had learned:

> "*Teachers who teach history and geography rely mainly on 'chalk and talk'. What stood out for me as a teacher is that learners are able to visualise the content that is taught. It keeps learners engaged and wanting to learn more through asking the why and how questions.*"
> "*From the gallery walk, I was able to take strategies that I can use to teach the content, make it more meaningful and also fun at the same time.*"

Discussion

The service learning gallery walk project was designed to remove students from the familiarity of the classroom environment and to put them in another authentic practice teaching environment. We discuss the significance of the findings for the field of teacher education but also show how these findings are relevant for other professional fields.

Service learning as a form of non-placement WIL can extend our understanding of the process and situation of learning from experience. First is that it compels higher education teachers to consider the value of student emotions, interests, activities and their personal and interpersonal skills (Root,

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[2] The United Nations officially declared 18 July as Nelson Mandela International Day. In recognition of the 67 years of his fight for social justice, a global call to action was made for people to sacrifice 67 minutes of their time on the day each year to fight poverty. In South Africa, this day is widely acknowledged both in the public and private sector with constituents dedicating 67 minutes or more for volunteering and/or providing donations to the needy.

Callahan & Sepanski 2002) in learning. It also encourages a form of student learning that is both co-operative and communal, and that makes use of specific contextualised personal and professional knowledge (Eyler & Giles 1999). In service learning, the knowledge that students develop is embedded in the situation in which they use it. In the language of situated cognition[3], "situations … co-produce knowledge through activity", thereby rendering *activity* and *situation* integral to the processes of knowledge making (Brown, Collins & Duguid 1989, p. 1).

In this study students developed pedagogical content knowledge (PCK) for social studies. PCK is generally considered to be an amalgam of content knowledge and pedagogy (Shulman, 1987) and is one of the issues with which teacher educators struggle (Loukomies, Petersen & Lavonen 2018). We have also long held the view, after the work of Snow (2018) that the PCK of a primary school teacher should take greater cognisance of child development. The service learning gallery walk enabled students to draw on their knowledge of how young children learn and develop in different settings, and adapt their teaching repertoires accordingly in the moment (Drake & Reid 2018).We believe that such authentic learning experiences can prepare students for the diversity of pupils' learning styles in the real world (Darling-Hammond 2006).

Other teacher competencies impacted by the service learning gallery walk were curriculum differentiation and learner engagement. A typical primary school class in South Africa consist of 35 to 45 children, and new, inexperienced teachers cope by teaching to the mean, or adopting rigid class protocols to control classroom behaviour. Students learned that they needed to make nuanced pedagogical changes in the moment of teaching, deciding which learners require remediation and which extension activities. Students also had to learn to be more innovative in their methods in order to grab and hold learners' attention for the duration of their teaching episodes. Their activities, in an outdoor environment, with multiple distractions, had to engage learners optimally in order to reach the learning outcomes. These aspects are not easily taught in the regular setup of a university programme, but seem to have been more easily facilitated as part of a service learning project such as this. An important part of curriculum differentiation is emphasised by Snow (2018), who argues that middle school teachers need to learn how to promote deep comprehension through activities that engage young children in reading fact-filled topics such as climate change, local and global politics, in a setting that encourages learner participation. The service learning gallery walk for the social sciences not only provided student teachers with "topics that stimulate language and thinking" but also "create(d) opportunities for time on task" while promoting "vocabulary diversity and extended discourse" (Snow 2018) related to the children's lives.

The social component of the service learning gallery walk also directly influenced the culture and nature of students' understanding. Using the ideas of Brown, Collins and Duguid (1989, p. 39) we argue that through service learning, students enter a form of "cognitive apprenticeship" in which they are enculturated into an authentic practice by their joint activity and social interaction. Students learn about their profession and about being professionals by being in a setting that requires them to act like professionals and reflect on their actions within it. They have to engage with *all the elements* of the situation while negotiating meaning with others, which compels them to acquire, develop and use specific cognitive tools from the profession. Working in small groups seems to have assisted students in developing the habits and minds of a professional teacher. These are encapsulated in Bruner's notion of "learning to be" (cited in Brown & Duguid 2000), which is about developing a social identity, disposition or "eye" of an expert teacher, ideally learned in

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[3] Situated cognition as used here is based on the writing of Brown, Collins and Duguid (1989). These scholars acknowledge that their theorising draws on the research of activity theorists such as Vygotsky, Leontiev and others in the field, on the work of Rogoff and Lave, Engestrom, Lave and Wenger and in particular, on the work by Lave herself.

practice as a student. The small group work meant that students were able to engage with peers, deal with contestation and conflict and learn the habits associated with teacher professional behaviour. From the data it is also evident that the tensions in the group led to innovation and adaption in PCK development, a form of expanded learning. It is through questioning, critiquing, rejecting and accepting or considering different ideas that students are developing the skills of critical thinking, collaboration, communication, problem solving, social and cultural competences and the self-regulation necessary to cope as professionals in the 21st century (Kereluik et al. 2013; Rotherham & Willingham 2010). Also evident was students' ability to transgress the boundaries of individual subjectivity to work towards the collective outcome of presenting engaging social studies lessons.

In all of this, reflection as a cognitive process is highlighted. It is through reflection that students transform experiences into usable knowledge (Morton 1995). The co-operative nature and critical process of learning inherent in service learning, as well as the need to reflect–in-action and reflect-on-action, can help students move from technical levels of reflection, to more contextual and dialectical levels (Taggart & Wilson 1998). Technical level reflections produce students who are most concerned with meeting short term goals such as achieving lesson outcomes. On the other hand, contextual reflection involves students examining the full circumstances of situations and questioning pedagogical practices (Taggart & Wilson 1998) and at a dialectical level students will take cognisance of issues of "equality, emancipation, caring and justice" (Taggart & Wilson 1998, p. 5) in planning and implementing activities. More importantly, students reflecting on experience at a dialectical level are able to explore and question the value of various knowledge systems in relation to one another, consider moral and ethical issues in teaching, learning (and service) and interrogate their own taken-for-granted assumptions about these issues (Taggart & Wilson 1998). We see evidence of our students reflecting on contextual and dialectical levels.

The service learning project has also promoted a form of active citizenship learned *in situ*, which, for us, is the real value of this service learning gallery walk. As Petersen and Henning (2018) argue, service learning "transforms *how*, *why* and *what"* students learn through experience. Drawing on the work of Brown, Collins and Duguid (1989), they contend that it is in the authenticity of the social context of service learning that the culture and nature of student learning and understanding are influenced most. In the service learning gallery walk students "move into and engage with all the elements of the situation in which they serve and learn" (Petersen & Henning 2018, p. 6). Service learning promotes citizenship learning in context and situates such learning in the everyday lives and context of both the school learners and the students. The value of this cannot be overemphasised, particularly in a country such as South Africa, in which there is a great need for active, involved citizenship in both political issues, such as in the recent 'fees must fall' movement (Pillay 2016), and in conservation of the environment (Mukheibir & Ziervogel 2017). In the transformative era of globalization and the fourth industrial revolution, active citizenship is necessary if students are to become involved in civic actions designed to promote social justice (Cho 2017). Our experience in this project has shown us that it is possible to develop student teachers' professional competencies while also developing the values associated with active citizenry. These are the graduate attributes that are required in most professions, including teacher education, and that are most challenging to engender in traditional work-integrated learning placements.

Conclusion

As teacher educators, we strive to ensure that student teachers in our primary school programmes receive as much practice as possible in acquiring the attributes of a professional teacher. In a social studies methods course we used the pedagogy of service learning and customised a gallery walk with second year student teachers, and a group of Grade 5 learners and teachers to investigate how it could impact the development of professional teacher competencies. In particular, we were interested in how service learning as a non-placement form of work-integrated learning could influence student teachers' pedagogical content knowledge.

In this study we have seen how service learning, with its experiential basis and in combination with the conceptual idea of a 'gallery walk', positively influenced students' learning of subject content knowledge and the development of pedagogical content knowledge for history and geography. We saw changes in students' pedagogical repertoires, as they incorporated local issues and landmarks into their teaching. They appeared to understand how important breadth and depth of subject content knowledge was for a primary school teacher. These were important achievements. However, perhaps the most unexpected learning was in the reciprocity of serving and learning for the participants. The benefits of the learning extended beyond the normal university programme requirements. Students learned more about teacher professional behaviour and competencies from the learners themselves than from their university coursework. The two Grade 5 teachers could learn from the students, something that is not commonly expected in school based work-integrated learning. Most importantly, the value of the service learning gallery walk, situated in the everyday lives and context of both the school learners and the students, prompted the development of active, involved citizenship. These learning experiences are key to the development of students' professional and pedagogical development as teachers and as lifelong, engaged citizens. These lessons hold much promise for other professional fields.

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