PORTFOLIOS AS ASSESSMENT *FOR* LEARNING: A CASE STUDY OF PRE-SERVICE FOUNDATION PHASE TEACHER EDUCATION STUDENTS

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ABSTRACT

South African Foundation Phase teacher education programmes are criticised for not delivering critical and creative students who can rightfully take their place in an ever-changing world. Moreover, the demand for developing teacher education programmes that are of high quality and lead to meaningful development of teachers as well as several national and institutional teacher education policy changes has led to revisions to approaches to assessment. The aim of this article is to indicate how portfolios can be used as a reflective learning tool in assessment.

A qualitative exploratory case study is presented where Foundation Phase teacher education portfolios were analysed thematically to establish whether portfolios promote learning through students' engagement in reflection. We argue that student reflections through portfolios have the potential of enhancing the process of thinking about learning, thereby encouraging students to think about more than just their marks, but also their personal development and growth.

An analysis of the data showed that students developed the ability to reflect as they progressed through the portfolio, albeit superficially. There were strong indicators that the portfolio tasks enabled different levels of reflection and learning. We found that the students had not developed the ability to assess their own teaching or learning, and it made us realise that we need to do more probing for such critical thinking about the way we implement the portfolio task.

Portfolios hold much value for summative assessment purposes, but it is important to acknowledge its value to enable assessment *for* learning. Therefore, a mind shift is needed towards alternative uses of portfolios in teacher education programmes as well as how they can

be used for sustainable assessment. The construction of learning portfolios with an explicit focus on learning could bring about important changes for Foundation Phase teacher education students, as it enables them to become more aware of their own learning and growth and could serve as a form of professional development for pre-service teachers that could also serve them well when practising as in-service professionals.

Keywords: portfolios, reflection, assessment for learning, sustainable assessment

INTRODUCTION

It is said that the most defining skill for the 21st century is not technology-related but involves the ability to solve problems and adapt to change. The communities in which we live, work and play have become multicultural microcosms of the world and we therefore need more critical and creative thinkers with an understanding of the impact of this expansion on our everyday lives. In higher education it is critical to develop students who can rightfully take their place in an ever-changing world. In the teacher education space at a research-intensive university such as where we are employed, we need to be especially cognisant of these associated challenges and the graduates we would like to produce.

The National Council for Accreditation of Teacher Education (NCATE 2010, 1) states as follows:

> "We need teachers who are well versed in their curricula, know their communities, apply their knowledge of child growth and development, use assessments to monitor student progress and effectively engage students in learning. Teachers need collaboration, communication, and problem-solving skills to keep pace with rapidly changing learning environments and new technologies."

South African teacher education programmes are criticised for not delivering on such needs. Research conducted by the Department of Basic Education and the Department of Higher Education and Training found that the quality and relevance of teacher education programmes offered by higher education institutions fluctuate (DBE and DHET 2011, 15). The Integrated Strategic Planning Framework for Teacher Education and Development in South Africa, 2011–2025 states that universities have the responsibility for ensuring that the programmes that are offered are of high quality and lead to meaningful development for teachers (DBE and DHET 2011, 3). This formed the basis of the most recent overhaul of teacher education programmes with the implementation of the Revised Policy on the Minimum Requirements for Teacher Education Qualifications (MRTEQ).

Teacher quality is an area that needs attention (DBE and DHET 2011, 15). The MRTEQ defines standards at a generic level for all teacher education qualifications. It also recognises

that teaching is a complex activity that is premised upon the acquisition, integration and application of different types of knowledge practices or learning (DHET 2015, 9). So, if teacher education programmes were to respond to the minimum criteria as described in the policy, attention should be paid to the various types of knowledge that underpin teachers' practice, as illustrated in Table 1.

Table 1: Types of learning (knowledge mix) that underpin teacher education programmes (adapted from the MRTEQ [DHET 2015, 9–11])

Disciplinary learning	Pedagogical learning	Practical learning	Fundamental learning	Situational learning
1. The study of education and its foundations	1. Pedagogical learning – knowledge of learners, learning, curriculum and general instructional and assessment strategies	1. Learning from practice, including the study of practice	1. Learning to converse competently in a second official language	1. Knowledge of the varied learning situations, contexts and environments of education
2. Specific specialised subject matter	2. Specialised pedagogical content knowledge – knowing how to present concepts, methods and rules of a specific discipline to create appropriate learning opportunities for diverse learners and to evaluate learner progress	2. Learning in practice, involving teaching in authentic and simulated classroom environments	2. The ability to use information and communication technologies	
			3. The acquisition of academic literacies	

The MRTEQ favours types of learning associated with knowledge acquisition, integration and application. In fact, it highlights disciplinary learning, pedagogical learning, practical learning, fundamental learning and situational learning as knowledge for teaching. It also highlights the need for integrated and applied knowledge. This refers to scrutinising, fusing and expressing various types of knowledge in practice as well as mastering certain competencies such as a scholarship or learning, reflection, synthesis and research skills (DHET 2015, 9–11).

Besides national teacher education programme policy demands and changes, our institution has also heeded a call for excellence in academic programmes as well as transformative student experiences (SU 2021). Subscribing to these pressures also ran parallel with the revisions of the assessment policy at the institution where the research was conducted. Changes to the assessment policy made provision for the inclusion of and movement towards sustainable assessment practices. This is because the institution is led by national policy

guidelines that stipulate that assessment should be "a continuous and iterative process that is not used to measure learning only but is also a means to develop lifelong learning and to promote innovative and creative thinking in order to consolidate existing learning and build further learning" (CHE 2016, v). The assessment policy of the institution where this study was conducted recognises that assessment is an integral part of learning and teaching (SU 2021). The policy makes provision for different assessment purposes, namely diagnostic, summative, formative, sustainable and evaluative. These purposes emphasise a balanced approach to assessment practices aimed at developing students' enquiring minds as lifelong learners who can judge their own performance and that of others. One way of serving this end goal is to enable and nurture students who can self- and peer-assess in line with the principles of sound and fair assessment (SU 2021). Instead of emphasising a one-sided focus on marks, such an approach will also ensure that student learning is promoted by supporting students to self-monitor, assess their own learning and reflect on learning experiences, as was the case in the teacher education programme under study.

As the development of programme revisions came to the fore, we also had to revise approaches to assessment in the teacher education programme. A complete paradigm shift in choice of assessment was needed to enable the type of learning in teacher education programmes. However, despite providing a framework for learning in such programmes, teacher education policy pays little to no attention to how one might ensure assessment *for* learning in these programmes.

A shift from traditional summative assessment practices to assessment practices that are sustainable and enable learning was needed to develop students who can apply their learning, are well proficient in their curricula and effectively engage in their learning. Portfolios are a popular assessment tool in teacher education programmes.

The use of portfolios that include reflection to enhance learning, teaching and assessment and to develop lifelong learning skills has seen huge growth in higher education of late. Portfolios encourage self-direction and reflection and form a basis for professional development. Smith and Martin (2014, 295) show how findings from their research illustrate that "being professional" is strongly associated with skills of reflection and lifelong learning, reiterating that it is impossible for individuals to keep developing themselves without skills of reflection. Reflection might be seen as both an approach and a method for improving the quality and depth of student learning (Clegg 1995); a way of thinking about learning that helps students to understand what, how and why they learn. It is about developing the ability to make judgements and evaluate learning.

One way of developing reflective practice is through the use of a portfolio that includes a

reflective summary or commentary. In this article, we explore how the compilation of portfolios enables students to reflect on their learning. We aimed to answer the following question: Do portfolios promote learning through students' engagement in reflection? We argue that student reflections through portfolios is a way to foster complex learning for Foundation Phase teacher education students.

LITERATURE REVIEW

Portfolios as a tool for learning

Portfolios are an organised compilation of artefacts that demonstrate knowledge, skills, values and/or achievements, including reflection (Cooper and Love 2007), and are used as a teaching and evaluative tool in a wide variety of disciplines (Scully, O'Leary, and Brown 2018). The most important characteristic of any portfolio is its primary purpose, which is to help students reflect on their academic goals and progress as learners. Moreover, Yendol-Hoppey and Franco (2014, 28) state that a portfolio is an excellent reflection tool, as it enables students "to recognise, analyse and learn about what works and what doesn't in their teaching". In essence, it is a tool to use to self-evaluate their teaching.

The portfolio is not the easiest type of teaching tool to implement, but it can be a very effective one. Along with student reflection, it provides valuable information about how each student learns and what they deem important in the learning process. As opposed to individual tasks or activities over a semester or year, a portfolio contains a purposeful selection of student work. Scully, O'Leary and Brown (2018) distinguish between three types of portfolios. The aim of the first type, the showcase portfolio, is simply to showcase examples of work and achievements. The second type, namely the assessment portfolio, is typically used in higher education settings and is compiled specifically for assessment purposes, with students receiving a mark based on the work submitted in their portfolio. The third type of portfolio is the learning portfolio. This portfolio includes drafts and unpolished work. The focus here is on the process of compiling the portfolio as well as the completed product. The learning portfolio also includes reflective pieces, ongoing formative assessment tasks and feedback, which are important elements of the learning process (Klenowski, Askew, and Carnell 2006). The overall goal of a learning portfolio is to document learning over time.

As such, learning portfolios are beneficial for helping students to gain important abilities and skills such as self-assessment and critical thinking and to monitor their own learning over time. Birgin and Baki (2007) confirm that learning portfolios provide pre-service teachers with the opportunity to assess their own learning and growth, and help them become self-directed

and reflective practitioners, thereby contributing to their individual and professional development. According to Nicholls (2001), professional development has significant implications for lifelong learning, which can be linked to the notion of sustainable assessment. The focus in sustainable assessment is on preparing students to become lifelong learners who will be able to judge their own performance after graduation in a workplace with no formal assessments. Lifelong learning has become crucial in an ever-changing and increasingly complex world where critical thinking and reflection skills are required. Sustainable assessment is described as "assessment *as* learning" (Boud 2000), focusing more on the process than the product of assessment.

Theoretically, learning portfolios offer a host of other benefits. The creator of the portfolio plays an active role in choosing the material for inclusion. This, combined with the strong focus on reflection, is thought to shift the locus of responsibility from the lecturer to the student, with the latter becoming more engaged and active in their own learning. In line with both social constructivist (e.g., Glasersfeld 1989) and metacognitive (e.g., Flavell 1979) theories of learning, this should foster a deeper level of processing and a greater awareness of own cognition, including personal strengths and weaknesses. As such, learning portfolios are intended to support, measure and document critical self-reflective lifelong learning, once again denoting assessment *as* learning.

Scully, O'Leary and Brown (2018) state that learning portfolios are suited to the development and assessment of cross-curricular knowledge and generic graduate attributes. These portfolios encourage critical thinking and creativity, as opposed to focusing solely on disciplinary knowledge. This is of particular value in teacher education programmes that have the responsibility to develop pre-service teachers who have sufficient disciplinary knowledge and to prepare them for the reality of the classroom. Learning portfolios may be perceived to be a valuable teaching tool for teacher education programmes in seeking to broaden learning experiences and assessment practices so that pre-service teachers are capacitated with critical and creative thinking skills.

Portfolios and reflection

Portfolios can enable teacher education students to recognise, analyse and learn about their teaching, provided it is used as a tool for reflection (Yendol-Hoppey and Franco 2014, 28). Reflection in teacher education programmes demands that students make sense of what they have learned, why they learned it and how the learning took place. We lean on Black and Plowright's (2010, 246) definition of reflection, which states that reflection is "a process of engaging with learning and/or professional practice that provides an opportunity to critically

analyse and evaluate that learning and practice". So, its purpose is to develop professional knowledge, understanding and practice and to incorporate a deeper form of learning that is transformational in nature.

An assumption exists that a reflective teacher equates to a good teacher (Frick, Carl, and Beets 2010, 422; Van Manen 1995, 40). Furthermore, the MRTEQ seems to endorse this view by stating that reflection should be used to integrate and apply learning in teacher education programmes (DHET 2015, 9). Reflective practice in teacher education is generally characterised as the ways in which student teachers critically interrogate their learning and teaching practice and, as an outcome of this interrogation, consider how they might refine and improve their practice (Lyons 1998). However, according to Van Manen (1977, 225), this interrogation may be a linear process. This linearity has various levels, and he characterises it as "ways of knowing".

Van Manen (1977, 225–226) identified three ways of knowing in reflective practice: the technical, the practical or interpretive, and the critical. The latter emphasises long-term shifts in personal understanding and reflexivity. Just like a structure, reflection provides a scaffold for students to make sense of experiences and to make connections. It helps students to think more critically about how they learn.

A portfolio as an assessment tool contains a section dedicated to reflection and this is one way of introducing students to the idea of reflection on practice. For this study, portfolios were constructed to allow students to reflect on and explain their learning. The intention was that students learn about practice through reflection and critically examine their actions and decisions. For reflection and learning to be centred, the reflective practice had to be scaffolded. In doing so, the reflections functioned on three levels in the portfolios. Like Reddy and Menkveld (2000) we drew on Van Manen's levels of reflection to position our work.

Van Manen (1977, 225) suggests that reflection occurs at different levels. The first level of reflection is the technical reflection. At this level, students reflect on their personal teaching and learning experiences. Their thinking about this is often at a superficial level, as the reflective thoughts are often simply descriptions of what happened in the teaching and learning situation. The purpose, educational value and theoretical connection are aften left unexplored (Van Manen 1977, 225). Reddy and Menkveld (2000, 178) state that at this level, students do not examine the goals of classrooms, but the reflection is restricted to classroom management and the personal experience thereof. In the case of teacher education programmes, an example of technical reflection would include the procedures students followed in their lessons, leaving the pedagogical reasoning for this choice unexplained or unexamined.

The second level of reflection is practical or interpretive. This level refers to the practical

actions taken in the process of reflecting on a particular problem or situation (Van Manen 1977). Reddy and Menkveld (2000, 178) describe this level of reflection as a level where students would be able to "devise resolutions to problems in action". Simply put at this level of reflection, students should engage with the choices they made in action. Reddy and Menkveld (2000, 178) explain that when students engage at this level of reflection, they should not only devise "easy routine solutions" or a technical judgement to practical actions but should also be able to deliberate on teachers' and learners' actions in the learning situation. Furthermore, in teacher education, this level of reflection may afford students the opportunity to engage with the choices they made in action.

Critical reflection is the third level of reflection, which, according to Reddy and Menkveld (2000, 179), "incorporates moral and ethical criteria such as whether important human needs are being through the discourse of practical actions". Shandomo (2010, 101) describes critical reflection as the process by which students identify the assumptions regulating their actions, locate the historical and cultural origins of these assumptions and question these assumptions to develop new ways of actions. This level of reflection places students in a position to construct knowledge for themselves, as they have questioned their own actions through the process. For teacher education students to learn through reflection, it is imperative that this level of reflection is included in reflection tasks. If teacher education students are able to reflect on this level, they will be able to elevate their learning and teaching actions, because not only do they have to consider the political, moral and ethical impact of their teaching actions, but they will also have to use this to make decisions about future teaching actions.

Korthagen (2001, 53) identified a number of functions for reflection, which vary from enabling teachers to analyse, evaluate and change their own practice to the appraisal of moral and ethical issues, which include their own beliefs about good teaching. This implies that if reflection is incorporated into teacher education programmes effectively, pre-service teachers will be able to examine, evaluate, assess and change their own practices.

Portfolios as a form of assessment

The use of portfolios for summative assessment dominates the literature (Klenowski et al. 2006). What is lacking, however, is research that provides insight into how a portfolio for learning, which includes reflection, can be used in teacher education programmes. The sentiment exists that teacher education graduates are not prepared for the realities of the classroom (Gravett 2012, 2). This may be because assessment in teacher education programmes has often been focused on assuring learning. Students in such programmes engage in formative ways of learning, as they need to complete assessment tasks *for* learning. Teacher education

programmes also draw on summative ways of learning where students need to show how much they know, which is an example of assessment *of* learning.

It has been documented in literature that traditional assessment, which is linked to summative assessment (assessment *of* learning), is no longer adequate for decisions related to student progress and growth. As tests largely focus on information and memory (Van der Horst and McDonald 1997, 188), they do not reflect students' actual knowledge and abilities. Therefore, there is a move away from traditional assessment practices towards more sustainable assessment approaches, which are characterised by student self-assessment, peer-assessment and reflection (Boud and Soler 2016).

The notion of sustainable assessment was built on a strong foundation of formative assessment that included the important move from assessment *of* learning to assessment *for* learning. However, it developed further to refer not only to the formation of students within the timescale of a course, but also to future practice for which courses are a precursor. It suggests that for students to become effective lifelong learners, they need to be prepared to undertake assessment of the tasks they face throughout their lives (Boud and Soler 2016). In the case of teacher education, sustainable assessment practices would enable students to learn about teaching while developing ways to think about teaching. So, sustainable assessment is a crucial practice in teacher education to prepare students for the world of work.

The focus in sustainable assessment is on preparing students to become lifelong learners. This is coupled to assessment *as* learning, which aims for the long-term goal of preparing students to contribute to society, while also meeting the academic requirements of the university. The notion of sustainable assessment was developed to focus on the need for all assessment practices to equip learners for the challenges of learning and practice they will face in the real world. It is defined as assessment "that meets the needs of the present and prepares students to meet their own future learning needs" (Boud 2000, 151). Boud and Falchikov (2007, 3) state the following:

> "Commonly, assessment focuses little on the process of learning and on how students will learn after the point of assessment. ... [It] is not sufficiently equipping students to learn in situations in which teachers and examinations are not present to focus their attention. As a result, we are failing to prepare them for the rest of their lives".

Assessment therefore needs to be more sustainable.

In this study, learning portfolios provided a discursive space for reflecting on learning and teaching. Furthermore, reflection in the portfolios entailed pre-service students identifying and describing experiences through the selection of evidence, analysing it to inform future practice.

Therefore, portfolios were used as a teaching tool to allow students to reflect on their practice. This represents a shift from reflection for the short term towards reflection for more sustainable purposes, modelling the notion of assessment *as* learning. This approach takes cognisance of the argument by Loughran (2006, 129) that assessment opposes what we try to achieve through reflection, because the emphasis can shift so easily to a simple right and wrong approach – a dilemma exacerbated by the pressure of assessment *of* learning in teacher education programmes, which is marks-driven. In essence, the assessment approaches in this project were in opposition to such thinking and focused on longer-term assessment *as* and *for* learning.

MAKING A CASE FOR PORTFOLIO WORK IN A FOUNDATION PHASE SERVICE-LEARNING TEACHER EDUCATION MODULE

Service-learning was employed as a teaching and learning strategy within a module in the Foundation Phase B Ed programme. This programme is an initial teacher education programme with the primary purpose of certifying beginner teachers for foundation phase teaching. Foundation Phase teachers are responsible for laying the foundation for five- to nine-year-olds' literacy, mathematics and beginning knowledge learning. By implication, these teachers need to develop competence in skilful teaching. This is done by appropriately using and integrating learning and learning strategies and activities in particular settings based on knowledge and understanding of learners, as well as the application of professional judgement (Ball and Forzani 2009, 497).

Service-learning[1] formed an integral component of the module as it afforded the pre-service Foundation Phase students with an opportunity to engage in a situated learning experience. Service-learning was also employed with the intention to enhance the students' understanding of their academic content while integrating it with meaningful community service, instruction and reflection (Billig and Eyler 2003, 14). As part of the learning and teaching strategy, students had to document their learning by completing a structured teaching portfolio. Shulman (1998, 37), who introduced the teaching portfolio in teacher assessment, describes a teaching portfolio as "the structured, documentary history of a set of coached or mentored acts of teaching substantiated by samples of student work and fully realized only through reflective writing, deliberation and serious conversation".

The teaching portfolio was planned as a structured teaching and learning tool where pre-service Foundation Phase students had to document their learning and teaching activities (for the service-learning project). These activities had to be validated with examples/artefacts of their learnings, which were developed either through reflective writing or through reports of reflective conversations with peers in the learning and teaching setting.

In addition, the teaching portfolio was used as a theoretical activity, as the students engaged in the following significant processes to produce the product (teaching portfolio):

i.   The development of the teaching portfolio was dependent on the lecturer's mentoring, as time (a specific number of lecture periods) was devoted to critical conversations with the lecturer and peers during the teacher education programme.

ii.   The teaching portfolio was driven by a set of learning objectives that referred to critical knowledge and skills Foundation Phase teachers need to have.

iii.   The teaching portfolio documented evidence of the students' learning process about Foundation Phase learning and teaching; this included examples of their lessons, reflective thoughts about lesson implementation and examples of learner activities.

iv.   The teaching portfolio documented reflective essays that were critical interrogations about what the students learned, while reference was also made to theoretical readings and how this manifested in practice.

v.   A final feedback session was presented to a community of teachers from the school (situated learning experience), teacher educators, faculty members and peers, where students could showcase their readiness for the workplace.

Employing a teaching and learning strategy such as this, is an example of an integrated learning opportunity. It is also an attempt to chip away at the theory–practice divide saddling teacher education programmes which Gravett (2012) often refers to in her work. In addition, by employing service-learning as a teaching and learning strategy (and incorporating the portfolios) in the module foregrounds an example of a teacher education programme, which, like NCATE (2010, ii) suggests, is trying to move away from the norm where theory and coursework are loosely linked to practice but attempts to develop a programme that is grounded in practice and interwoven with academic content. In essence, the portfolios were designed and incorporated into the teacher education programme to help pre-service students develop the ability to reflect on their learning at various levels.

As teacher educators, it was imperative that we structured the portfolio tasks so that students thought about their practical experiences as well as theory and integrated the two. The students engaged in the following significant processes to produce a final portfolio:

i.   Part 1 – ASSURE: This part of the portfolio represented the showcase portfolio. Students had to document and show what they were doing in the module and the intervention (service learning). This showcase opportunity was open to include any tangible evidence of the teaching and learning activities coupled to the module. The reason for the showcase

portfolio was to assure that students achieved the module outcome of developing teaching and learning materials for literacy instruction in the Foundation Phase classroom. This phase can be linked to Van Manen's (1977, 225–226) technical reflection as illustrated in Figure 1.

ii.   Part 2 – ENABLE: This part of the portfolio, also illustrated in Figure 1, demanded that students engaged in structured reflective exercises to document their learning. It presented students with an opportunity to purposefully collect work that exhibited their efforts, analyses and progress during the module. This part of the portfolio enabled students to use this information to facilitate their learning through a reflective essay and can be linked to what Van Manen (1977, 225–226) considers as practical/interpretive reflection.
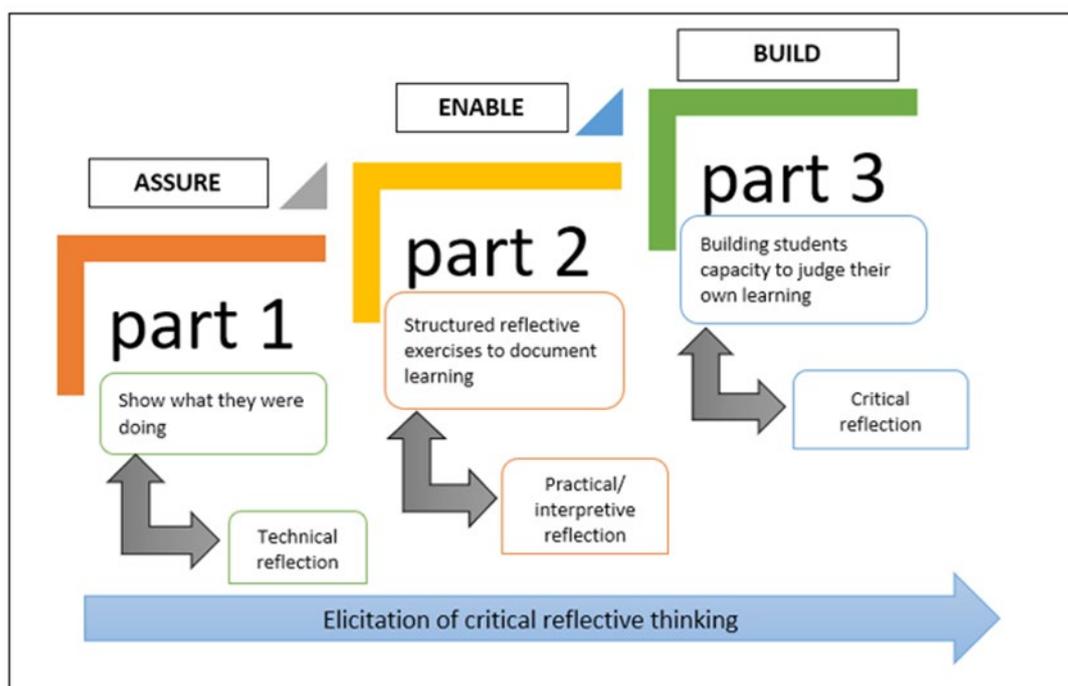
Figure 1: The use of portfolios in a Foundation Phase teacher education programme

iii.   Part 3 – BUILD: This part of the portfolio was focused on building students' capacity to judge their own learning. Students had to evaluate their own learning and make meaning thereof. In doing so, students were prompted to engage in critical reflection, which is an important part of sustainable assessment (*cf*. Figure 1). Critical reflection, which refers to a process of meaning making, required of students to use what they have learned to inform future action and consider the real-life implications of the lessons learned. Critical reflection is an important skill for students to have, because if students cannot judge the quality of their own work, how can they learn? If graduates cannot judge or be critical about the quality of their own work, how can they elevate their practise?

RESEARCH METHODOLOGY

A qualitative exploratory case study approach was employed to explore whether portfolios promote learning through students' engagement in reflection. An exploratory case study explores those situations or cases in which the intervention being evaluated has no clear, single set of outcomes (Baxter and Jack 2008, 548) and according to Creswell (1998, 477), such cases may be a programme, an intervention, a student cohort or activities such as the implementation of a new approach or programme. Zeichner (1999, 9) states that case studies in teacher education programmes provide "a close-up and detailed look at particular teacher education activities and show what a teacher education programme looks like from the inside". So, a detailed analysis of a teacher education activity, the portfolio, provided some insider perspectives.

PARTICIPANTS AND SAMPLING

This study drew on the learning of B.Ed. Foundation Phase pre-service teachers who enrolled for a module in the fourth year of the programme. The module had 81 students (n = 81) enrolled. All students had to complete the portfolio process as per the module requirements. However, students were invited to present their portfolio as an artefact for the research study. Participation in the research study was completely voluntary. A total of 43 students responded to the invitation to submit their portfolios for the research study. A research assistant anonymised the submissions prior to analysis.

DATA COLLECTION AND ANALYSIS AND DISCUSSION OF THE DATA

Portfolios served as rich data for this study. A qualitative data set comprising 43 portfolios (n = 43) was analysed. Thematic coding and analysis were employed, as the focus of the research was to determine whether portfolios promote learning through students' engagement in reflection. The analysis of the qualitative data demanded that the data be segmented, categorised, summarised and reconstructed in a way that captures the important concepts within the data set (Ayres 2008, 867). The typologies of reflection as developed by Van Manen, the portfolio (as per Figure 1) and key ideas about student learning formed the basis of the analytical framework for the development of the themes.

Ethical clearance was obtained from the institutional Research Ethics Committee: Social, Behavioural and Education Research, project number: 15380. The study adhered to all the guidelines for ethical research. The pre-service Foundation Phase students were assured that they could participate in the intervention, even if they chose not to participate in the research.

Various themes emanated from the analysis of the student portfolios. The purpose of this

study was to discover whether portfolios can promote learning through students' engagement in reflection. The following sections present a discussion of the themes related to the purpose of the study.

Theme 1: Show and tell: Technical evidence for learning

The portfolios documented exemplars of the students' best lesson plans and teaching activities and were presented methodologically in showcase portfolios, which students can possibly use in future when applying for teaching positions.

The students were able to showcase the choices of lesson materials, lesson planning and other learning activities in their portfolios. This was accompanied by explicit descriptions of what they were trying to showcase. These descriptions referred to lesson progression as well as the teaching and learning materials used in lessons. Photograph 1 is an example of where a student showcased evidence of lesson materials (flash cards) used.

Photograph 1

This is an example of technical reflection because the student documented her learning at a very superficial level. In doing so, the student assured herself of her learning, as she documented what she did in terms of teaching and learning materials in the lessons she presented. In a general sense, the students managed to showcase very well what they did in terms of lesson presentation and lesson progression.

An analysis of the portfolios often brought to the fore that students simply listed the use of activities with lesson presentations and neither explained why the activity was used, nor what was learned from incorporating the activity. The caption for Photograph 1 was simply "Flashcards for -nk sound". There was no explanation for how the flashcards were used and why they are used in lessons. They could describe and regurgitate exactly what they did in the teaching of lessons and there were well articulated summaries of lectures and lecture material. However, these reflections were never positioned within compelling academic statements of their learning. In essence, the students assured themselves of their own learning by "showing and telling" what they did, but the reflections were often unexplained and the educational value

unexamined. Such technical reflection does not give any sense of the influence of context on practice, and therefore does not contribute to deep learning.

Theme 2: Students' ability to think about what they are doing

Part of the portfolio activities was that students documented evidence of their learning processes in Foundation Phase teaching and learning. For example, lesson plans, as well as reflective essays where they had to critically interrogate topics that formed part of the module content, formed part of the portfolio tasks. The scope and depth of the reflections gave us an indication of how the students were thinking about what they were doing, if at all. In the case where students had to reflect on lesson presentations, they were able to explain what they did in terms of lesson progression but failed to articulate the impact of this lesson on their learners' learning. An analysis of the portfolios did, however, show that students started thinking about future lesson implementation, as there were references to how they would adjust their planning should they have to present/teach the same lesson again. Some students were able to illustrate how they changed these teaching plans for learners who were struggling in their learner groups. This showed that their thinking went beyond technical reflection and that they were growing towards practical reflection, because they could justify why they were doing things differently. In essence, the portfolios enabled them to self-evaluate their teaching. What we do miss in the data, though, is their ability to interpret what this means for their own learning. There was a clear indication of students being able to relay experiences, however, and there were instances where they "made meaning" of these experiences, as their portfolio tasks displayed examples where they engaged with the choices they had made.

The students who were aware of the complexity of the teaching task were in the minority. They referred to several contextual teaching and learning challenges, such as learner groups with diverse abilities and needs. Rahman, Scaife, Yahya and Jalil (2010, 84) posit that "teaching is not any longer considered as a linear process" but teachers are expected to be more effective in enabling diverse groups of learners succeed. This position illustrates how complex the task of teaching has become. We noticed that students mostly reflected on their own experience of teaching and not on how their teaching may impact the learning process. This demonstrates that the students' thinking was limited to their act of teaching only, with minimal interpretation of their teaching practice. This is of concern, because their reflection was limited to them teaching, as opposed to the impact of their teaching and the things they need to consider as part of the teaching task, despite having worked in a situated learning context for 11 continuous weeks while working on this portfolio.

Theme 3: Students' ability to think critically

Even though the students could articulate what they had learned during this portfolio process, we struggled to find evidence of synthesis of the learning. In search of this synthesis, we tried to find evidence where students would document their thinking about teaching the same material in different contexts. In sections where they had to critically interrogate the content, we only saw levels of their comprehension and not necessarily what that content meant for them as developing pre-service Foundation Phase teachers. One student said, "The reflective activities which include the reflective essays about the readings and the reflections about the daily teaching really helped me to think about what I was doing and why I had to do it." Another student stated, "Reflecting on the article which separates the different approaches to teaching phonics really made me think about the choices I made to teach my weekly phonics lesson; am I using an analytical approach or a synthetic approach and why?"

It is clear that they have not developed the ability to assess their own teaching or their own learning, and it made us realise that we need to do more probing for such critical thinking in the way we design the portfolio task. The absence of critical thinking may also be because this level of reflection and thinking is not necessarily probed anywhere else in the programme/course. Another reason may also be the students' level of maturity, and that their ability to be critical of their own practice needs more time for development. Teacher educators need to be aware of how students think about teaching, what a good teacher is as well as what good teaching practice is and include activities that trouble, and question stereotyped ideas and dominate discourses favouring technocratic rationalities about teaching as a practice.

We concur with Zhou (2017) that students need to construct their own meaning of learning processes and apply what they have learned in new situations. To do so, they need to learn to think critically about knowledge and the world of teaching with all its complexities. More probing for critical thinking in the design of the portfolio would therefore assist student teachers to construct more meaning of their learning and in this way enhance their teaching practice. This could be done by providing more opportunities for students to exercise problem solving, creativity and collaboration with others. Involving students in the learning process in this way could potentially affect assessment for learning.

CONCLUDING REMARKS AND RECOMMENDATIONS

Teaching portfolios are valuable in teacher education and assessment, and in the intervention reported on in the study they were used to document student experiences, thoughts, actions, and subsequent learning about teaching. This is in line with Loughran and Corrigan's (1995) description of the use of teaching portfolios as a form of sustainable assessment.

An analysis of the data showed that students developed the ability to reflect as they progressed through the portfolio work. Even though the reflection was on a superficial level, there were strong indicators that the portfolio tasks enabled reflection and learning. Evidence of student learning could be seen in the students' ability to delve into what they were doing, even though there were limitations to their meaning-making processes to confirm the level of learning.

Technical reflection dominated the portfolio work, even though there were many examples of practical reflection too. The students' inability to reflect critically placed a limitation on their learning envisaged. This inability may be because students were consumed by the practice of teaching and the skills and procedures related to these practices. Including portfolios in the teacher education programme is a given; however, we will have to build in another phase and further scaffolding into the model, especially in Part 3: Build (cf. Figure 1), to facilitate and enable critical reflection.

This study serves as a reminder that the portfolio process is an ongoing journey of development. While the portfolio still holds much value for summative assessment purposes, it is important to nurture a mind shift towards alternative forms of assessment and, more specifically, assessment *as* learning. The data from this study showed that the use of portfolios that include reflection has the potential of enhancing the process of thinking about learning, thereby encouraging students to think about more than just their marks, but also their personal development and growth. We also demonstrated how a shift from the traditional view of a portfolio (a collection of work selected and organised by the student, with a written justification) to a learning portfolio that focuses attention on the process of learning could be beneficial for assessment *as* learning. The construction of learning portfolios with an explicit focus on learning could bring about important changes for students as they become more aware of their own learning and growth. The construction of the learning portfolio could therefore serve as an effective form of professional development for pre-service teachers that could also serve them well when practising as in-service professionals. While the article focuses its attention on foundation phase teaching, the study insofar that it looks at teachers' capacity for critical thinking and creativity, has implications for teaching across phases. To this end alone, the article has the potential to make an interesting contribution to the existing literature on teaching and teacher education. We conclude that portfolios are indeed a useful pedagogical choice for assessment *as* learning in teacher education programmes and that including this as part of the assessment regime would undoubtedly add value to teacher education programmes.

NOTE

1. Service-learning, premised on experiential learning, is a reflective, relational pedagogy that combines community or public service with structured opportunities for learning (Petersen and Osman 2013, 6).

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