REFLECTION ON THE USE OF E-PORTFOLIOS DURING TEACHING PRACTICUM AT A UNIVERSITY OF TECHNOLOGY IN SOUTH AFRICA

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Abstract

During teaching practicum student teachers are expected to acquire major pedagogical skills that have to do with classroom management; organisation; self-criticism; leadership; teaching; testing and assessing between themselves. Evidence of all activities of a student-teacher during teaching practicum is usually contained in a portfolio of evidence which is submitted to the faculty at the end of the program. At the Central University of Technology, this portfolio has always been paper-based. The aim of this project is to reflect on the use of e-portfolios during teaching practicum as a replacement for paper-based portfolios. The project used Participatory Action Research (PAR) as a research methodology. Workshops, interviews, and observations were used as data-gathering instruments. Internal stakeholders took part in the project and included student teachers and lecturers, and the e-learning center at the Central University of Technology. This report provided an overview of the entire project, including the planning phase results. Thematic analysis arrived at teacher training institutions must adopt e-portfolios as a reflective tool to enhance students learning.

Keywords: *Teaching practicum, e-portfolio, pedagogical skills, self-criticism, reflection.*

1. Introduction

To comply with the prescripts of the Policy on the Minimum Requirements for Teacher Education Qualifications (MRTEQ), teacher education institutions in South Africa must send student teachers for work-integrated learning (WIL) as part of practical learning. Practical learning comprises learning from practice and learning in practice. In education, WIL is referred to as teaching practicum or teaching practice (TP). Teaching Practice forms part of learning in practice. It involves teaching in an authentic and simulated classroom environment (Department of Higher Education and Training, 2015). First, TP includes aspects of learning from the practice of teaching in the form of observations and reflecting on lessons taught by others, as well as learning in the practice of teaching which involves preparing lessons, teaching, and reflecting on lessons presented by oneself (Van Wyk, 2017). During this period student teachers who are registered full-time for a Bachelor of Education (B.Ed.), according to MRTEQ, are to spend a minimum of 20 weeks and a maximum of 32 weeks in a formally supervised and assessed school-based practices over the four-year duration of their degree (DHET,2015). Student teachers at the Central University of Technology normally go on teaching practice, at schools, for a period of two or three weeks depending on their year of study. For the 1st year of study, it is two weeks of observations. In the 2nd year of study, student-teachers go for six weeks of co-teaching and the six weeks are divided into three weeks in the first semester and three weeks in the second semester. The 3rd year follows the same arrangement as the 2nd year. In their 4th year of study, student-teachers go for six weeks of the actual teaching and lecturers visit their respective schools to evaluate them. Evidence of all activities of a student-teacher during teaching practicum is usually contained in a portfolio of evidence which is submitted to the faculty after each TP period. Portfolios have been broadly recognized and applied to develop prospective teachers' reflection competencies in the last two decades (Carl & Strydom, 2017). It is a media that facilitate student-teacher's reflections on their knowledge building and complex realities in their teaching practices (Van Wyk, 2017). They are given guidelines within which reflections about their knowledge and teaching practices are scaffolded. It is also a means to measure student teachers' readiness to teach (Wray, 2007). Shulman (1998, 37), an early proponent of educational portfolios, defines the teacher's working portfolio as a " structured documentary history of a set of coached or mentored acts of teaching, substantiated by a sample of student

portfolios, and fully realized only through reflective writing, deliberation, and conversation" Traditional portfolios have been in a paper-based format but recently because of the increased integration of technology into teacher preparation curriculum, the rise of electronic portfolios format has been observed (Wray, 2007).

The purpose of this paper is to outline the planning phase of the introduction of e-portfolios as a reflection tool for CUT student teachers during teaching practicum. The e-portfolio project is proposed by lecturers in the Department of Educational and Professional Studies (DEPS) because, at the Central University of Technology, the teaching practicum portfolio has always been paper-based.

The aim of this project is reflected in the use of e-portfolios during teaching practicum. The purpose of this e-portfolio is for the student teacher to know and record the pedagogical reality of the school, integrate critical and reflective thinking about their vocation as educators, and analyse and reflect on the observations at the school such as enrolments, responsibilities, and their relationships in the educative institution (Carl & Strydom, 2017). The teaching practicum e-portfolio is specifically aimed at enhancing the teaching practicum as a source of reflection and learning. It is further aimed at assisting student teachers to reflect on their own performance and their future as educators and finally to assist them to observe diverse aspects of the school reality.

The need to introduce the e-portfolio at this institution was a result of the following. First, the university was faced with the challenge of storage. The university did not have enough storage facilities to store paper-based portfolios in line with the requirements of DHET, one of which is that the institution must keep the students' portfolios for a period of three years after completion of their study. Second, submission of paper-based portfolios during the Covid-19 period was practically impossible because during this period there was minimum physical contact between the institution and students. Third, recording the reflections on the student's experiences during the Covid-19 was a challenge. Some of the processes could not be fully implemented and this frustrated both students and lecturers. Last, evaluating paper-based portfolios and evaluating student-teachers teaching in front of a class during the Covid-19 period presented a challenge. As a result, lecturers had to come up with a way to overcome these challenges, and the use of e-portfolios was found to be a feasible option. The e-portfolio was preferred because it can be easily shared, stored, and updated (Pallitt, Strydom & Ivala, 2015). This kind of portfolio includes arranged multimedia embedded in the text or hyperlinked. It can provide opportunities for reflective practices and provide a potential for collaborative learning (Pallitt, Strydom & Ivala, 2015). E-portfolios can promote immediate feedback from both peers and lecturers (Van Wyk, 2017, Pallitt, Strydom & Ivala, 2015).

2. What is an e-portfolio?

Like a normal paper-based portfolio, there are many definitions of an e-portfolio, and it can be used for different purposes. Some researchers refer to an e-portfolio concept, pedagogy, and/or practice, rather than a particular online system (Pallitt, Strydom & Ivala, 2015). An electronic portfolio uses digital technologies, allowing the portfolio developer to collect and organize portfolio artifacts in various media types like audio, video, graphics, text, and multimedia. A good e-portfolio is both about being a product (a digital collection of artifacts) and a process (of reflecting on those artifacts and what they represent (Centre for Teaching Excellence, University of Waterloo, 2013). Literature refers to the concept as electronic portfolio (e-portfolio/EP) or digital teaching portfolio (DTP) or online teaching portfolio (OTP) but for this project, the term "e-portfolio" is used throughout (Van Wyk, 2017). For the purpose of this paper, an e-portfolio is a digital collection of essays, photographs, videos, and processes, created by student teachers, during their teaching practice-related experiences at schools.

e-Portfolios are a way to generate learning as well as document learning (Basken, 2008). An e-Portfolio is both a product, that is, a digital collection of artifacts, and a process. As a process, e-Portfolios generate learning because they provide an opportunity and virtual space for students to critically assess their academic work, reflect on their work, and make connections among different courses, assignments, and other activities, such as work experiences, extracurricular pursuits, volunteering opportunities and more (Carl & Strydom, 2017, Pallitt, Strydom & Ivala, 2015). They also support students' own knowledge construction and make invisible aspects of the learning process visible. E-portfolios are key to curriculum integration and implementation that takes both technology and pedagogy into account (Pallitt, Strydom & Ivala, 2015).

3. e-Portfolio project outline

The aim of this project is to reflect on the use of e-portfolios during teaching practicum. The project will take a maximum period of three academic years. Each academic year will have its own outcomes, and these will progressively build on the deliverable of the previous academic year. In the first year of the project, the researchers concentrated on planning. This includes, among others, meetings with the CUT

e-Learning section to design a strategy for the migration of paper-based portfolios to e-portfolios. The designing of all e-tools/ documents that will be used on the university learner management system (e-Thuto). Soliciting Lecturers' and students' views about the envisaged use of e-portfolios for teaching practicum was also undertaken. In the second year, the electronic system will be tested. This will include, among others, the training of lecturers to use the system. A pilot study using first-year student teachers during their observation period will be conducted. This will be the process of checking the functional capacity of this electronic system and the perceptions of student teachers and schools towards the use of e-portfolios. The third year of this project will include the full-scale implementation of the project for the first year (observations) and second-year second students (co-teaching). Feedback will be sought from the students and mentor teachers at schools to prepare for the teaching practicum for the third and fourth-year students.

The initial plan was executed as follows. First, a blueprint e-portfolio was developed on the university learner management system (e-Thuto) by colleagues from the e-learning section. Second, a video of instructions on how to create an individual e-portfolio was developed and distributed to all student-teachers. Third, a platform was created for students to generate their individual files using MS One Drive (Cloud) and this gave students 1 Terabyte of storage space. Forth, when students are ready to submit their e-portfolios they just have to create a link to their files and submit their links on e-Thuto, for it to be evaluated. Last, a video of the instruction on how to evaluate the e-portfolios is developed and distributed to the affected lecturers.

4. Methodology & research design

This project employed Participatory Action Research (PAR) to fulfil its aim of reflecting on the use of e-portfolios during teaching practicum. PAR is adopted because the co-researchers will actively participate in dealing with problems that affect them in their practices (Kemmis, McTaggart & Nixon, 2014). Additionally, it will give participants an opportunity to engage in identification or acknowledging the existence of the problem; studying the problem; analysing it, and designing ways of addressing the problem (Kemmis, et al. 2014). The paper involved collective, community-based research since all participants will benefit on the ground of shared responsibility (Kemmis, et al. 2014). Internal stakeholders included the three lectures, students, and the e-learning centre from the DEPS as co-researchers in keeping with PAR principles of empowerment and equality. Other internal stakeholders will be e-learning specialists, lecturers from other four departments in teacher education at CUT, and student teachers. The four Departments from which the participants will be drawn are Languages, Natural Sciences, Mathematics, Computer Science & Technology, and Economic & Management Sciences. External stakeholders will comprise mentor teachers from the Foundation Phase (FP), senior phase (SP), and Further Education and Training Phase (FET) schools in and around Bloemfontein, Botshabelo and Thaba-Nchu.

The project followed the cyclical stages in a participatory research process. The first stage of PAR relates to problem identification and acknowledgment of the problem. The second stage is about the planning of the actual processes to be followed. The third stage involves action or the activities to be carried out. The fourth stage involves the implementation of the outcomes of the activities and involves what the participants learned collectively as a team. The cycle will start again to reflect and identify the limitations and embark on continual improvement and corrective measures, with the objective of tackling the challenges (Cohen, Manion & Morrison, 2018).

5. Findings

Integration of ICT into curriculum practices is an important component of education in the twenty-first century that should be protected for educational purposes. Institutions were also pushed to alter their teaching and assessment practices as a result of the Covid 19. Workshops, interviews, and observations were used to gather data. The paper's claim is that knowledge-producing procedures are increasingly becoming prioritized in a variety of educational settings.

5.1. Implications for students

The project covered assessment, data storage, documentation, and the integration of e-portfolios into teaching and learning for students and lecturers. Traditionally, first-year to fourth-year teacher candidates created and presented paper-based portfolios that proved their understanding of teaching and pedagogy. e-Portfolios covered documents that students can use to reflect on their teaching. Students' responses back up this assertion:

"e-Portfolios aided me in expanding my knowledge and abilities while also allowing me to thoughtfully record what I learned and did at school".

"Using technology, I was able to reflect on my learning path."

"The lecturer's documentation assisted me in organizing the e-portfolio and I was aware of the expectations."

"The professors were helpful and guided the project."

During the teaching practicum, the majority of the students felt at ease with e-portfolios. The most difficult part was uploading the e-portfolio onto the system for evaluation. In order to build their e-portfolios, students needed information help, and motivation from their lecturers.

5.2. Implications for the lecturers

The lecturing staff needed to be taught about e-portfolios and have access to technological support. The instructors were a little nervous about introducing e-portfolios and the process during the initial workshop and face-to-face meetings.

"I don't think e-portfolios will work, so I propose we put them off until next year."

"It will be impossible to introduce e-portfolios to all teacher education groups."

More e-learning centre workshops and face-to-face meetings and interactions resulted in increased motivation, learning, co-teaching, and community of practice. The positive result was that e-portfolios for teaching practicum could be implemented at all levels.

6. Conclusion

The aim of the paper is to reflect on the use of e-portfolios during teaching practicum as a replacement for paper-based portfolios. The institutions' expectations will play a significant role in the success of the use of e-portfolios as a reflective tool for teaching practicum. This will put researchers on their toes to ensure that all the loopholes are attended to. Stakeholders need to be regularly monitored to ensure that this project succeeds. It is the intention of the researchers to ensure that this project realizes its outcomes and that all the stakeholders learn as much as possible for the benefit of student-teachers. As a result, teacher education institutes must adopt e-portfolios as a reflective tool and use them to enhance students learning.

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