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Reflection: A Renewed and Practical Focus for an Existing Problem in Teacher Education

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Abstract: Reflection has been a component of teacher education programs for many years. The introduction of the Early Years Learning Framework (EYLF) and the National Quality Standard (NQS) into Western Australian schools appear to have brought a renewed focus to this. For universities involved in teacher education, reflection remains a complex construct that requires scaffolding and nurturing. The question remains, however, how to effectively do this.

This paper provides a practical focus to developing reflection by outlining strategies that address this issue. Through the scaffolded implementation of an Action Research project for pre-service teachers, this research project identified a number of key recommendations. Firstly, there is a need for a strong model of reflection to be used consistently across degree programs; secondly, reflective processes should be embedded in practice; and finally, universities need to be mindful of the assessment of reflection and the impact that this assessment has on the reflective process.

Introduction

Reflection is not a new focus for pre-service teacher education, nor is it a concept that has been neglected in educative discussion and publication. It has, however, received renewed focus in recent years, particularly in the arena of early childhood education, due to mandated policy changes associated with the Early Years Learning Framework [EYLF] (Department of Education, Employment and Workplace Relations [DEEWR], 2009) and the National Quality Standard [NQS] (Australian Children's Education and Care Quality Authority [ACECQA], 2012). Both of these documents outline the need for reflective practice in quality early childhood learning environments.

With the increased attention on reflective skills and abilities, this paper provides a practical focus that identifies the concerns in developing reflection and reflective practice. It is acknowledged that reflection is a complex process that requires depth of thought and ongoing improvement and focus, but it is hoped that the concrete strategies outlined in this paper can be implemented towards enhancing preliminary reflective skills for early childhood pre-service teachers, and provide a base from which to continue to build. The strategies suggested can be adopted in numerous ways and integrated into a range of units and/or courses.

The recommendations for practice in this paper were identified through a qualitative, mixed methods research study that scaffolded the development of reflection with fourth year Bachelor

of Education students. These pre-service teachers were undertaking a minor in Early Childhood or Special Needs Education. As part of their last year of studies, pre-service teachers were required to complete an Action Research project that focused on a self-selected area they were concerned about in their practice. These projects were scaffolded by a series of prompts made available through an ePortfolio platform.

At the completion of the individual Action Research projects, pre-service teachers were asked to provide feedback on the scaffolding received and the impact this may have had on their reflection. Data were collected through an online survey, focus group and individual interviews as well as document analysis from 37 individual pre-service teachers (47% of the cohort). The data were collated and coded using a grounded theory approach where each level of data added to the earlier ones to identify key themes and areas of concern. The data collection and analysis were used to identify which of these prompts were successful in developing reflection in pre-service teachers.

It is anticipated that the design principles and strategies for practice generated from this research can be applied to enhance pre-service teachers' reflection, for both personal and professional growth, during their teaching degrees and classroom practice in the future. This will increase confidence and enhance the early childhood educators' skills as they continue to meet the challenges and requirements of not only the governing documents, but changing roles of their work.

Literature Review

Taken literally, the term 'reflection' refers to the image viewed when looking into a reflective surface such as a mirror. The opinion formed of this image is influenced by factors in its surrounds, and the viewpoint of the reflection is determined by the viewer's perspective. This basic premise of self-examination, perspectives and contextual influence is consistent with reflection in more formal areas, including pre-service teacher education.

Reflection has long been an important component of teacher education programs. It has been identified as a convoluted process and has been researched by seminal authors including Dewey (1933), Shulman (1987), Mezirow (1991) and Schön (1983). It is an activity that has been debated in relation to:
1.   the terminology used to describe it: managerial reflection, reflective thought, mindfulness;
2.   the process implemented to complete it: four steps, a cycle;
3.   the method to facilitate it: models, use of a coach, structured experiences; and
4.   the timing of it: before, during, after (Rogers, 2001).

The definition used for this research came from the work of Dewey (1933) who wrote that reflection was the "active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and further conclusions to which it tends" (p. 9). This definition implied that the process was dynamic and required examination of evidence and background information in a specific way.

The work of Dewey was further examined by Rodgers (2002), who highlighted that reflection was different from other types of thought, as it was difficult to assess and define and the effects of reflection were difficult to research. These factors led to what Rodgers saw as a loss of value of the process. Despite this concern, there have been innumerable studies into

reflection and its role in higher education, particularly in the social sciences. The focus in degree-structured higher education has been on reflection of the practical components of a course. Reflection has been encouraged in teacher education courses due to the need for novice teachers to make links between theory (the supposed form of knowledge) and practice (the grounds that support it) (Penso, Shoham, & Shiloah, 2001) and to review practice for continuous improvement (Boyd & Fales, 1983).

Pre-service teachers come to university with a range of background knowledge that must be "reconstituted in the context of becoming a teacher and in the creation of a professional knowledge of teaching" (Vazir, 2006, p. 445). This, however, is "a complex process that strongly influences learning by increasing understanding, inducing conceptual change, and promoting critical evaluation and knowledge transfer" (Strampel & Oliver, 2007, p. 973). Pre-service teachers need to develop a clear understanding of what reflection is (clear definition), how to do it (a systematic process), the need to involve others in the process (interaction in the community), and above all, they need to be open to the possibilities it unlocks (attitudes) (Rodgers, 2002). It is the multifaceted nature of the process of reflection that makes it difficult to effectively scaffold within teacher education courses, although a number of approaches have been trialled (Rogers, 2001).

Several implementations of reflective practice have been specifically concerned with *how* and *when* to apply components of the process. Examples include a cyclic approach of plan-act-review as a method of developing reflective practice. This can occur in minor or sizeable iterations towards improvement (Grundy, 1995). In this cycle, the reflective practitioner needs to identify an area of concern then plan how they will address it. Practitioners are then able to enact this plan for evaluation and improvement (McNiff & Whitehead, 1993). The cycle can be implemented multiple times until an appropriate solution has been identified (Bryant, 1996). Indeed, the EYLF (DEEWR, 2009) contends that a culture of professional inquiry is established when educators engage in an ongoing cycle of review.

The *timing* of this review process has also been examined by other authors, including Schön (1983). He proposed that reflection occurs in the phases *reflection-on-action* or *reflection-in-action*. Reflection-on-action refers to reflection that takes place after an event, while reflection-in-action is implemented when experiences are examined at the time they occur. Additional research has added to this to include anticipatory reflection that facilitates planning for the event and proactive reflection that occurs after the event with a focus on future action (Seibert & Daudelin, 1999). Ramsey (2010) also examined the timing of reflection and identified that there may be a blending of these stages in terms of the reflection after the event being integrated with the reflection that occurred during the event to provide a focus on ongoing improvement.

Moore-Russo and Wilsey (2014) also looked at the timing of reflection, although their focus shifted. Rather than targeting the *when* of reflection, their study began to examine the purpose of reflection and proposed that it was more important to have *productive reflection* at any stage in the process that allowed for a more comparative and critical approach to the practice that led to instructional adaptation or action.

Despite this collection of research and the apparent importance afforded to the development of reflection, in higher education, to date the "teaching of reflection [remains] inconsistent and superficial" (Barton & Ryan, 2014, p. 409). With the plethora of research completed on reflection and reflective practice, there is still no consensus on effective strategies to teach and analyse reflection (Thorsen & DeVore, 2013), and it is believed that the use of

"broad and generic conceptions of reflection may mask inadequate preparation practices" (Etscheidt, Curran, & Sawyer, 2011, p. 3). It has been suggested that this is perhaps due to difficulty in defining and investigating reflective ideas (Hatton & Smith, 1995) and the differences in these definitions and measures (Nelson & Sadler, 2013). Research has identified that pre-service teachers generally have a broad understanding of reflection and the process involved (Pedro, 2005), but they need focused attention on all levels of the reflective spectrum through scaffolded experiences (Ryan, 2013). Without effective scaffolding that targets the development of reflection it will continue to be "tagged on, rather than constituting a way of working and learning" (Barton & Ryan, 2014, p. 410) or become what Bullough, (1989, p. 15) labelled a "slogan prone to meaninglessness" (cited in Etscheidt et al., 2011, p. 3). There is concern that the current practices and promotion of reflection do not match with the rhetoric around the concept (O'Donoghue & Brooker, 1996, cited in Etscheidt et al., 2011).

It seems that in practise, pre-service teachers are being told about reflective practice in their courses, and are expected to implement it and write about it, yet their understanding of the purpose of reflective practice appears to remain limited. Gelfuso and Dennis (2014) found that reflection did not occur among the pre-service teachers, even when the ideas of Dewey were present (judgment, analysis/synthesis, and balance to explore reflection as a communal process). The approach of telling and assuming is no longer acceptable, especially in early childhood education, where reflection is given such importance. The implementation of reflection has officially become an essential requirement for pre-service teachers through mandated policy documents and is integral to quality early childhood practice.

The National Professional Standards for Teachers (Australian Institute for Teaching and School Leadership [AITSL], 2011), the EYLF (DEEWR, 2009) and the National Quality Standard (ACECQA, 2013) all incorporate reflection and reflective practice as important for educators. Each document has been designed to guide quality practice and continuous improvement in the education and care of young children in different sectors within the Australian context. Further to this, the AITSL Standards and the NQS regulations are the basis of registration and licencing procedures for teachers and early childhood settings, which require attention be given to them.

The National Professional Standards for Teachers (AITSL, 2011) informs the requirements for educators at several levels of their careers. These guidelines ask graduate teachers to demonstrate competency in a range of areas that include professional learning. The standards that rely on teachers' own reflective abilities include:
6.1   Identify and plan professional learning needs
6.2   Engage in professional learning and improve practice
6.3   Engage with colleagues and improve practice
6.4   Apply professional learning and improve student learning
7.4   Engage with professional teaching networks and broader communities
These standards emphasise the need to review personal and professional practice, identify needs to improve skills and knowledge and utilise colleagues and wider networks to facilitate this improvement.

The EYLF (DEEWR, 2009) provides the framework of quality programs for early childhood educators. The EYLF names "ongoing learning and reflective practice" as one of the five core principles that "reflect contemporary theories and research concerning children's learning and early childhood pedagogy" (p. 12). This firmly places reflective practice at the forefront of quality early childhood teaching in that there is an expectation for educators to

continue to engage with relevant research (Dewey's form of knowledge) and apply these ideals into their professional practice (Dewey's grounds that support it).

Another document in which reflection is mandated in the WA context is the NQS (ACECQA, 2012) that has been developed with a focus on raising the quality of early childhood education and care services in Australia through continuous improvement. The NQS incorporates reflection in a number of the required standards for early childhood educators including:

1.2   Educators and co-ordinators are focused, active and reflective in designing and delivering the programs for each child:

1.2.3   Critical reflection on children's learning and development, both as individuals and in groups, is regularly used to implement the program.

7.2   There is a commitment to continuous improvement:

7.2.3   An effective self-assessment and quality improvement process is in place.

In a similar way to the AITSL standards and the EYLF, requirements of the NQS emphasise reflection as a way of ensuring the continued improvement of programs for young children based on sound research with a focus on ongoing professional development.

With a renewed focus to bring reflection into the forefront of teacher education, there is a challenge for educational institutions to identify alternate strategies that facilitate the required attention towards the development of reflection. This research targeted the development of such strategies to enable this specifically focused approach.

Methodology

The research was implemented in a Western Australian university with pre-service teachers in their final year of studies. The project was approved by the University Human Ethics Committee (2012/117). It was a mixed methods study that involved the scaffolding of reflection in pre-service teachers through prompts in an ePortfolio environment (PebblePad) followed by data collection via an online survey (25 responses), focus group interviews (7 participants), individual interviews (8 interviews) and examination of documents in six case studies. Those interviewed were from a convenience sample across the university demographic including pre-service teachers from both university campus locations and a variety of age brackets. The case studies were self-selected based on availability and engagement in the interview process, which may have resulted in some sample bias. The interviews were audio recorded, with participant permission, and transcribed for analysis using a constant comparative approach (Charmaz, 2003; Glaser, 1965). The reflective entries of case study participants were also examined across the time of the research projects. Each level of data built on the previous, to identify themes, successes and concerns in relation to the development of reflection.

The pre-service teachers involved in the research had chosen to undertake a minor in either Early Childhood or Special Needs Education. One of the prescribed units (20 week long subject over two semesters) for this cohort was a professional Action Research unit. In this unit, the pre-service teachers were required to conduct and report on individual action research projects that they completed to improve their practice in an area of their choice. Action Research was chosen, as it is a cyclic process that incorporates the stages of plan-act-review in a way that links reflective thought to research into a given topic to build knowledge and then act upon this (Grundy, 1995). It is this active component that has been identified as being important in effective reflective practice (Dewey, 1933; Rodgers, 2002). It was hoped that the scaffolding of

the Action Research project would improve the reflection of the pre-service teachers enrolled in the unit.

There were 79 pre-service teachers enrolled in this unit who were given access to the prompts in PebblePad from February to September. The prompts placed within the platform provided examples and activities, based on research into reflection, to guide the action research process and enhance the pre-service teachers' reflection.

There were 16 prompts in total uploaded to the blog, with activities to encourage pre-service teachers to complete a range of reflections across various contexts and with different purposes. Several of the prompts provided questions to encourage pre-service teachers to reflect on a particular experience that led them to become a teacher (Prompt 1), while others encouraged interactions with peers as a way of deepening the levels of reflection through examining different viewpoints (Prompt 12). A number of other prompts were specifically included to encourage the pre-service teachers to write reflective entries and review their own writing against a levelled model. For this research, the model used was the 4R model developed by Queensland University of Technology (QUT) (Ryan, 2011). This tiered framework (shown in Figure 1) was adapted from the 5R's suggested in 1999 by Bain, Ballantyne, Packer and Mills, and provided an overview of common levels of reflection. It was developed for the purpose of scaffolding reflective writing by providing pre-service teachers' with a clear definition of each level and examples of the language used in each of these (Ryan, 2011).

Level	Stage	Questions to get you started
1	**Reporting** and Responding	Report what happened or what the issue or incident involved. Why is it relevant? Respond to the incident or issue by making observations, expressing your opinion, or asking questions.
2	**Relating**	Relate or make a connection between the incident or issue and your own skills, professional experience, or discipline knowledge. Have I seen this before? Were the conditions the same or different? Do I have the skills and knowledge to deal with this? Explain.
3	**Reasoning**	Highlight in detail significant factors underlying the incident or issue. Explain and show why they are important to an understanding of the incident or issue. Refer to relevant theory and literature to support your reasoning. Consider different perspectives. How would a knowledgeable person perceive/handle this? What are the ethics involved?
4	**Reconstructing**	Reframe or reconstruct future practice or professional understanding. How would I deal with this next time? What might work and why? Are there different options? What might happen if...? Are my ideas supported by theory? Can I make changes to benefit others?

Figure 1: The 4R's of reflection (Ryan, 2011; http://www.drawproject.net/reflection)

The formal data collection for the research study was implemented at the completion of the pre-service teachers' Action Research projects. The key reason the data collection took place after the projects were complete was the ethical considerations in relation to the impact the research may have on pre-service teachers' work or the responses to the research being changed due to the assessment. Although the researcher was not a member of the teaching team in the implementation of the Action Research unit, they had been previously. In completing the applications and gaining ethics approval from the university, it was important to ensure there was

no perceived pressure on the pre-service teachers to be involved in the research due to any link with assessment. Many of these data sources focused on the use of the prompts within the PebblePad platform and the perceived level of engagement that the pre-service teachers had with these.

As the focus of this paper is the improvement of skills using techniques of reflection, the key aspects of data used were the online survey comments and interview transcripts and examination of work samples. The focus was on the confidence and perceived ability of the pre-service teachers to reflect, as well as the levels of reflection demonstrated in written work. A limitation in this area, however, is that this project only examined a small sample of work (6 case studies) and direct causality of improvement cannot be definitively claimed.

The analysis of this data led to the identification of strategies that were viewed by the pre-service teachers as being useful in developing their reflections as well as areas that they felt were important for future iterations of the prompts. These areas have been used to develop the design principles discussed below as practical strategies to be implemented towards improvement in pre-service teacher reflection within a University context. The recommendations can be used in other environments or electronic platforms.

Discussion

What was generated from the data analysis of the online survey and the transcripts of the interviews was that the pre-service teachers repeatedly provided comments in three distinct areas. When it came to the enhancement of reflection and reflective thinking and writing, the pre-service teachers identified the need for:
(1)   a consistent model or framework on which to base reflection,
(2)   reflection to be based on practice, and
(3)   consideration of alternatives for the assessment of reflection.

There was some improvement in levels of reflection in the case study samples, and although direct causality to the prompts or the Action Research project cannot be proven it adds to the findings in these areas. The details of these findings and the evidence of improvement in written texts are outlined in the following sections with support from the data collected.

Provision of a Consistent Model

Many of the pre-service teachers involved in the data collection commented on the 4R model (Ryan, 2011) and highlighted that they found it useful in the scaffolding of their reflective writing:

> *I found it difficult to reflect prior to commencing this unit. The 4R's approach presented during this unit is what assisted me in my reflective strategies (online survey [OLS])*
> *I'm pretty bad at reflecting so when I saw the 4R's framework it really helped me with trying to understand how I am supposed to be reflecting and the process in which I am supposed to follow not just writing what's in my head. So yes, I thought it was fantastic (individual interview [Ind])*
> *The 4R model gave precise details of how to reflect (OLS)*

A number of other pre-service teachers extended on these comments to indicate that they felt it would have been beneficial to have this model (or one similar) that was used consistently across their degree by all units and all tutors:

> *[My reflection] probably improved with a framework, which could have [been] introduced in first year (focus group interview [FG])*
> *If someone had given us that framework when we did [the introductory unit] life would have been a lot simpler (FG)*
> *Proceed through their education degree reflecting in a structure and form that is the same. This would allow more time for students to actually practice refining their reflective thought and practicing this before entering the 'real world' (OLS)*

In the online survey, the pre-service teachers were asked if they had been required to reflect throughout their education degrees. Despite a 100% response of *yes* to this question the pre-service teachers felt they had not been given a strong model on which to base the reflective writing and that the expectations of tutors across the course had not been consistent in this area:

> *We need more examples of good reflective writing and what we are expected to do (OLS)*

In terms of improvement in written reflections that align with these comments, the six case studies showed some level of improvement, although this was varied among those examined. The analysis of these documents involved selecting pieces from different stages of the project and highlighting the text in colours that matched the 4R model (Ryan, 2011). The use of colour meant that the levels present in the written abstracts were clearly visible to identify if there had been any improvement as judged by the depth of reflection defined in the model. Table 1 shows the levels of reflection in the three entries examined for each case study participant across three time periods of the action research implementation.

Case Study (pseudonyms)	Entry 1	Entry 2	Entry 3	Overall Comment
Chelsea	All reporting	Reporting and relating – 1 sentence of reasoning	Reporting, relating, reasoning and short sentence of reconstructing "This I must further investigate"	Solid improvement
Jaye	Reporting, relating and reasoning	All four although only one sentence from reconstructing "I needed to model this strategy as well and provide clear instructional directions (Barret 2012)"	All four including one whole reconstructing section. "This leaves me concerned, as I would have to teach the children the skills for self-critiquing …In hindsight, it would have been fantastic to be able to incorporate all forms of evidence…"	Remained strong

Alesha	All four with mixture of parts within the entry.	All four in order from responding to reconstructing. "My intention is that students can be part of the teaching and learning process and that there is always time for improvement and reflection"	All four again in order. "…will follow this direction being mindful to always use reflection and Action Research to improve upon my professional learning."	Developed greater depth and became more systematic
Zak	Mostly relating and reasoning with one reconstructing comment – "I must find solid ground for this issue."	Mostly reporting. (used a predetermined lesson plan reflective format). Only reconstructing was "It is something I have taken into great consideration for my next lesson."	Mostly relating and reasoning with brief report of the incident and one sentence of reconstructing – "This was something I was not able to be part of but could hopefully be involved in somewhere in my future as an educator."	Small improvement
Thomas	Mostly relating with small sections of reporting and reasoning. One sentence of reconstructing. "I intend to…"	Sections of reporting, relating and reasoning.	Small reporting (in the middle of the excerpt) with some relating and reasoning.	Minimal change
Madison	Large section of reporting with small amount of relating and one sentence of reconstructing.	Reporting, relating and reasoning with 3 small sections of reconstructing. "..considered previously and will investigate." "..spoken to the teacher about this and we have agreed to try this strategy…"	All four with approximately half the entry being reconstructing.	Increased depth of reflection over time

Table 1: Level of reflection identified from case study work samples

The pre-service teachers expressed that if there had been a consistent approach to the structure and expectations of reflective writing, they would have had a clear understanding of what was expected. This would have allowed them to focus on the content of the reflective entries rather than being concerned with the format and structure expected in different teaching units. These pre-service teachers were in the final year of their degrees and despite being required to complete the process of reflection throughout this entire period, they were not confident in their ability to effectively reflect on their practice.

From the feedback gained in this study, and examination of other research in this area, the first recommendation identified is the need for scaffolded use of a consistent model or framework for reflection across degree programs. Given that there are so many definitions of reflection (Rogers, 2001) and that the process requires a clear picture to be able to talk about it (Rodgers, 2002), the use of a consistent model across the Bachelor of Education degree would allow pre-service teachers to increase their confidence with the process of reflection in a more coherent way. To be effective, this model needs to be introduced early in the course and be utilised consistently so that pre-service teachers can move from the technical or descriptive aspects of the process to focus more deeply on the analysis of the content of their reflective writing, to then begin to be able to plan for "intelligent action" (Rodgers, 2002, p. 856).

The author of this paper neither intends to dictate which model to use nor believes that pre-service teachers should only ever be exposed to one model. It is beneficial for pre-service teachers to be introduced to the range of models and perspectives that exist around the construct of reflection; but for assessment and ongoing reflective development throughout a course, it is important to select one as the framework used consistently.

There are a number of strong reflective models that have been developed. These include, but are not restricted to:

- the Van Mannen (1977) model; provided levels of reflectivity that each provided their own course of action. This included technical rationality, that focused on application of knowledge to achieve an outcome; practical reflection, that clarified assumptions to take action; and critical reflection, that examines the wider context in which the action occurs (Brooker & O'Donoghue, 1993).
- Valli's types of reflection (1997); that examines reflection in terms of its typology to include "technical reflection, reflection-in-action and reflection-on-action, deliberative reflection, personalistic reflection, and critical reflection" (Minott, 2008, p. 55).
- the Gibb's model (1998); which provides a practical outline of stages to implement when reflecting including a description of an event, exploration of feelings about this and an evaluation of the event. This is followed by analysis, the drawing of conclusions and an action plan to continue the process into the future (Jasper, 2003; Knowles, Tyler, Gilbourne, & Eubank, 2006)
- the STAR or STARL-P technique; which also provides a sequence from which to scaffold reflective thinking from experience through reviewing the Situation, outlining the Task required, reviewing the Action that was taken, to examine the Result or Reflect. The addition of the L-P is to take this process into future action through either outlining the Learning or completing some Planning for the future (QUT, 2011) ;and
- the 4R's model (2011) used in this research that included the four levels of Reporting, Relating, Reasoning and Reconstructing (Ryan, 2011).

Individual courses or programs within university settings need to examine the range of models that are available, share these possibilities with course designers and introduce the ideas to the pre-service teachers, but then make a decision about which model is most suitable and will be utilised in formal reflective tasks. Useful questions to ask in making this choice are concerned with the purpose of the reflections, the timing of the writing of the reflections and whether the model chosen can be used for self and peer assessment as well as formal assignment submission.

Once the decision of the model has been made, co-ordinators or leading academics within that course need to ensure pre-service teachers are scaffolded in the use of the specific model from early in the degree. That model then remains consistent to allow the pre-service teacher

cohort to focus on deeper connections to the content of the reflections and enhance their abilities in reflective thinking and writing towards improved practice. It will provide the opportunity for persistent and careful consideration (Dewey, 1933) of the theory being taught.

For the six case study participants in this research, those who showed the most improvement were those that reported making a connection to the 4R model, and they commented frequently that they wished this had been introduced much earlier and used consistently in their degree programs. They also felt the improvement was based on the implementation of the full reflective cycle, which led to the identification of the next design principle.

Allow Pre-Service Teachers to Experience the Full Cycle of Reflective Practice in Multiple Contexts

The second key area recurring in discussions during data collection, was the need for reflection to be focused on practice rather than theoretical situations. The pre-service teachers reported that throughout the units of their degree they had repeatedly been asked to reflect on readings or abstract situations. The pre-service teachers were often asked to read a text or research paper and complete a written reflection on their reaction to this piece. The focus on this passive approach of reflecting on theory did not provide for reflective thinking on authentic or 'real' situations or to complete the act component of the reflective process (Rodgers, 2002). The statements supporting this included:

> *At uni sometimes you are told [to] reflect on readings and its really passive. It's like you have sat there and gone – this is what somebody else says and this is what I feel about what they have said (Ind)*
> *I would say that I was competent at using my reflections to inform planning, it was simply that I felt more exposure to the process 'for real' was necessary (OLS)*
> *They need to provide more authentic opportunities for students to reflect on a situation, such as a lesson, and the opportunity for the students to redo the lesson with the changes made (even in a tutorial based environment)…I think definitely have more formalised 'reflective' components of units earlier on in the degree to refine the skills (OLS)*

There appeared to be even less opportunity for pre-service teachers to actually reflect on a situation and then implement some change to practice based on this reflective practice. An opportunity to do so was provided in the Action Research project and many pre-service teachers commented on the value of this:

> *This unit allowed me to refine my reflective process as it allowed me to implement changes to modify teaching to enhance student learning and see first-hand improvements (OLS)*
> *The reflective component of this cycle is extremely important in all areas of teaching practice, and is a method that I will continue to employ throughout my teaching practice in the future (journal excerpt [Journ])*

The requirement for pre-service teachers to implement classroom practice and then reflect to plan and enact changes, even in a simulated situation, provided a practical focus to the reflective practice experience they felt had been missing up to that point. It gave pre-service teachers access to real-world experience and took reflection beyond the theoretical activity they had been exposed to as part of assessment processes.

The pre-service teachers involved in this study were complimentary about the use of a whole reflective cycle of Action Research to plan, enact and review their performance towards improvement. Authentic experiences, like the one scaffolded in this research, have been found to provide the best opportunities to gain real-life skills and abilities (Herrington, Reeves, & Oliver, 2010). It is important to be able to complete the full cycle of reflection so that the four criteria suggested by Dewey can be met in terms of: making meaning through connections, implementing a full systematic inquiry, interacting with others as part of a learning community, and developing attitudes towards reflection as being important for personal growth (Rodgers, 2002). This requires time and engagement with authentic tasks.

Pre-service teachers engaged in this research agreed that, the most authentic experience they can have relates to involvement within classrooms – the 'active' component of reflection (Dewey, 1933). Unfortunately these opportunities are becoming more difficult to facilitate. Two suggestions to combat this limitation are to provide simulated classroom situations, and increase the effective use of the time pre-service teachers do get to spend in the classroom.

Although simulations are not as good as real in-classroom experience, they can offer pre-service teachers a different context in which to practice their reflective thinking and writing when the classroom situation is not always available. Simulations can be micro-teaching to groups of peers or can be computer generated.

Micro-teaching sessions have been found to be a useful tool in preparing pre-service teachers for later classroom experience (Amobi, 2005; Cruickshank & Metcalf, 1993) by requiring them to think through a lesson sequence and implement this with peers who may raise questions through the experience. Computer generated simulations can be set up to require participants to make choices within an almost experiential situation to assist the development of their metacognitive abilities (Herrington et al., 2010). These decision making programs target the development of reflection-in-action where the theory needs to be applied to practice within that moment (Schön, 1983) or at the point of need.

Although these are not 'real' experiences, they provide more chances for pre-service teachers to complete reflective writing, and practice the skills involved with the process. This will allow them to internalize the structures and take advantage of reflection as a learning activity (Boud, 1999) and as a way to challenge their beliefs and knowledge (Dewey, 1933). Once these reflections are practiced, pre-service teachers may then feel more confident in completing the process in the classroom.

All teacher education degrees are required by accrediting bodies to have a minimum number of days within classrooms. It is therefore important to maximise the effectiveness of this time by ensuring pre-service teachers are actively reflecting and making changes to practice based on their self-reviews. Reflections need to be discussed with mentors or peers to allow them to be utilised for ongoing review and changes to practice. Collaborative reflection allows for affirmation of practice, the opportunity for external input to help see things in a new light and provides the support needed through the inquiry process (Rodgers, 2002). It is the process of discussion of reflective thinking that has been shown to assist in development (Sim, 2006) because pre-service teachers internalise their thoughts when they are able to then explain their ideas to another. The pre-service teachers need to consider their beliefs (Dewey, 1933) based on this new evidence. This is a strong meta-cognitive process and one that leads to the final design principle identified in this research. With thought given to the purpose and framework for reflective thinking and writing, self-evaluation of this process could be utilised effectively for the assessment of reflection.

Consider Alternatives for the Assessment of Reflection

The final area repeatedly raised by pre-service teachers through the data collection was concern centred on the process of assessing reflection. The pre-service teachers reported that they felt pressure to write "what the tutor wanted to hear" rather than compile a true account of what was happening or reflect on what they were actually feeling:

> *If you weren't writing about what you had done wrong, you weren't getting marks for it (FG)*
>
> *You need to regurgitate what [the tutors] wanted to hear (FG)*

One pre-service teacher clearly articulated her concerns in this area by stating that assignment writing is about getting the marks to pass rather than the personal learning that may occur:

> *It was an assignment at the end of the day. It wasn't necessarily about what I was thinking (Ind)*

The case study participants had not chosen the reflections in their projects to be examined, as they were volunteered to the research after assessment. This meant that there was no pressure on the pre-service teachers to have their entries follow a specific format or be for a particular assessment piece.

Most situations in higher education that involve reflective writing for pre-service teachers are for assessment. This highlights a mismatch in that the reason many education courses ask pre-service teachers to write reflections is to encourage them to learn from their experience. When the reflection is for assessment, however, this learning seems to be restricted. This point of view was of concern.

From comments made by the pre-service teachers in this research study, it appeared that the assessment of reflective writing changed the purpose of the writing from one of personal learning to one of achieving an external grade. This meant that instead of them internalising the reflective thoughts and identifying goals for personal growth, many were viewing reflective writing simply as another written task to submit for marking against criteria. "If the goal of reflection is personal growth and development, the author needs to be free to write what they really think/feel without the fear of writing the 'wrong thing'" (Roberts, Farley, & Gregory, 2014, p. 443). The phenomenon of the changed purpose of reflection has been highlighted by a number of authors as being detrimental to the process of reflection and therefore an ineffective way to scaffold the development of reflective thinking and writing in pre-service teacher education.

Kidwai, Johnson, Hsieh, Hu, and Buzzetto-More (2010) researched reflective work and found that there needed to be a differentiation between reflection and commentary to deter pre-service teachers from presenting the *cliché response*. Their research identified that "students might appear to show reflective activity but in reality these responses may be created only to satisfy requirements" (Kidwai et al., 2010, p. 253). This outcome was consistent with the findings of this research study.

Further research in reflection, based specifically in ePortfolios, has provided a number of other labels for the process pre-service teachers complete in writing reflection for assessment. Rennert-Ariev (2005) utilised the term *lamination*, coined by Shulman in 1998, to describe the presentation of "a showpiece rather than an account of meaningful reflection" (p. 2), while Thomas and Liu (2012) called it the *sunshining process*. They identified that in written reflections assessed in an ePortfolio, pre-service teachers would use *buzzwords* in their descriptions as well as language to *blameshift* or *downtone* negative aspects of their practice to present a positive outlook. The assessment of reflection often leads to it being viewed in terms of

a checklist of behaviours that need to be met, rather than the complex enterprise that takes time to develop and do well (Rodgers, 2002).

Taking the published research and participant feedback from this study into consideration, the final recommendation from this paper is to incorporate some elements of self-assessment into the reflective process. Pre-service teachers could be involved in grading their work using pre-determined assessment processes and submit the marking of their reflections for grading rather than the original reflective entries. They can self-select excerpts of their reflective writing that they feel showcase the levels used in their reflection while the complete content of the writing remains private and therefore may remain more 'real' (Roberts et al., 2014). The use of the written review of this reflection against criteria could be introduced as the assessable piece of work to eliminate some of the concerns surrounding the assessment of reflective writing (Boud, 1999).

Conclusions and Recommendations for Practice

Reflection in the context of this paper further supports the notion that it is a complex construct to define, scaffold and develop in the arena of higher education. With an increasing focus upon reflective skills and abilities that are essential to the quality of early childhood learning and care environments, universities need to re-examine how they facilitate the development of these proficiencies for pre-service teachers.

The research reported in this paper was completed with the aim of identifying clear strategies for practical improvement. While more evidence is needed to confirm the link between these scaffolding practices and the long-term improvement in reflective skills, it is anticipated that the adoption of the strategies highlighted in this paper will scaffold reflective thinking and writing for pre-service teachers. This will allow them to be better prepared and more able to effectively implement practices within their teaching environments. The principles provide a useful starting point for immediate implementation, as well as future research in this area. This is specifically in terms of other platforms that can provide the required scaffolded support, further exploration of alternative assessment strategies and methods to continue to attempt to demystify the process of reflection so that more practitioners are clearer about the process is, why it is important and are more confident in their skills in this area.

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