

Conceptions of Reflective Learning and Related Instructional Strategies in Preservice Teacher Education: A Literature Review

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Abstract: Developing preservice teachers' reflective skills is widely accepted as the main task of teacher education programs. However, definitions of reflection and instructional strategies used to develop the skill vary widely resulting in a lack of common understanding and coherent implementation strategies. This study examined the range of conceptualizations and related instructional strategies employed to foster reflective learning in preservice teacher education. Thirty-two articles, which were selected based on inclusion/exclusion criteria, were reviewed. Four different categories of conceptions of reflection were identified. The review also indicated instructional strategies designed to foster reflection that include evaluation of practice, meta-reflection, identifying critical incidents, conceptual argument, and experience sharing. Despite the variety of conceptions and instructional strategies, however, preservice teachers were provided with limited opportunities of reflecting on their beliefs, values and personal experiences. Also, there were seldom opportunities for reflection beyond classroom context such as everyday life and a larger socio-cultural context.

Keywords: reflective learning, reflection, instructional strategies, preservice teacher education

Introduction

The importance of reflection is widely recognized in higher education (Lucas & Tan, 2013) and it has been considered as a crucial experience which brings about enlightened change in modern society (Brockbank & McGill, 2007; Kember et al., 2008; Ryan & Ryan, 2013; Wharton, 2017). In teacher education programs in particular, reflection is considered as a key element of both personal and professional development (Maaranen & Stenberg, 2017; Nelson, Miller & Yun, 2016; Yost, Sentner & Forlenza-Bailey, 2000). Personally, reflection is considered as an integral part of learning to learn (Cambra-Fierro & Cambra-Berdún, 2007; Lucas & Tan, 2013), and helps students to progress and improve the quality of their learning experiences (Harrison, Short & Roberts, 2003). Cambra-Fierro & Cambra-Berdún (2007) posited that reflective learning helps students improve their academic results and develop important personal skills by engaging them in thinking and reflecting not only about the subject matter content but also about their own effort, attitude and dedication. Professionally, reflection is one of the transferable skills that are required from teacher education graduates (Smith, Clegg, Lawrence, & Todd, 2007) and helps them to cope with the demands of contemporary professional work.

Cognizant of its crucial role in professional preparation, it is imperative that reflective learning should be fostered in preservice teacher education. Researchers argued that fostering reflection should be one of the primary missions of teacher education programs and must be interwoven throughout the courses with the purpose of guiding preservice teachers in the reflective process and helping them build an awareness of their own theories and actions (Nolan, 2008; Yost et al., 2000). Despite the widespread agreements on its importance, however, what the concept of reflective learning actually refers to and how it can be fostered in preservice teacher education has been subject to different interpretations. Much of the literature on reflection is at a conceptual level (Peltier et al., 2005; Xiao et al., 2016) and knowledge about how teacher educators foster their students' reflective skills is sparse (Tigelaar, Sins, & van Driel, 2017). In addition, the abundance of frameworks and models that purport to explain typologies and processes of reflection does not solve the problem that the concept remains elusive (Clara, 2015; Jay & Johnson, 2002). Practical and effective strategies for fostering reflection in the learning process are yet to be established (Mortari, 2012). This problem calls for a systematic review and synthesis of the existing literature with the purpose of capturing the range of conceptualizations of reflective learning and developing coherent strategies for reflective learning among preservice teachers.

Research on teaching posits that instructional decisions and processes are grounded in one's conceptions of teaching, learning and knowing (Kember & Kwan, 2000; Lam & Kember, 2006; Pajares, 1992; Pratt, 1992). Kember and Kwan (2000) reported that a conception of teaching as transmission of knowledge is related to enacting content-based teaching and employing frequent tests and quizzes. Similarly, Lam and Kember (2006) reported a relationship between essentialist conceptions of teaching to subject-centered

approaches and contextualist conceptions to student-centered approaches to teaching. It is, therefore, logical to extend this view to reflective learning in that the nature of learning activities selected and enacted could be related to educators' conceptions of reflection (Clara, 2015).

This study therefore aimed at critically reviewing the empirical literature on reflection in preservice teacher education with the purpose of examining the range of conceptions of reflection and the nature of instructional strategies employed to foster reflective learning among preservice teachers. More specifically, we answer two questions: 1) How do educators conceptualize reflective learning in preservice teacher education? and 2) What instructional strategies have been used to promote reflective learning? Answering these questions will provide insight for educators and researchers about designing learning environments for reflective learning.

Models of reflective learning

Existing frameworks and models of reflection adopt different approaches to illustrate the concept and process of reflective learning. Based on the issues emphasized and the ways in which the relationships among the elements in the models are explained, existing models can be grouped into hierarchical, categorical and procedural. The most common approach is to represent reflection in terms of hierarchical levels. Examples of such models include Hatton & Smith (1995), Jay & Johnson (2002), Kember et al. (2008), and van Manen (1977). Van Manen (1997), for example, identified three levels of reflectivity: technical, practical and critical. Whereas technical reflection is concerned with means rather than ends, practical reflection allows for open examination of the means, goals (outcomes) and the assumptions they are based on (Hatton & Smith, 1995; van Manen, 1977). The highest level, critical reflection, involves questioning the worth of knowledge and its social conditions. In a similar vein, Jay and Johnson (2002) developed a typology of reflection that profiles three levels: descriptive, comparative and critical. Hatton and Smith's (1995) model, which was developed in the context of preservice teacher education, is also one of the most widely cited frameworks in the literature. They identified four distinct types of reflection: technical, descriptive, dialogical and critical. What is common to all of these models is that reflection is hierarchical and needs to be developed in a sequence moving from lower to higher level elements of reflection.

Another approach followed in the development of models is delineating categories or aspects of reflection rather than hierarchical levels (e.g., Black & Plowright, 2010; Grossman, 2009; Merizow, 1991). For instance, Merizow (1991) suggested three forms of reflection: content, process and premise reflection. Content reflection is concerned with problem solving and thus the focus is on the problem. On the other hand, process reflection focuses on the strategies and the procedures in order to check the decisions one makes. The third type of reflection, premise reflection, involves assessing and challenging taken-for-granted assumptions. Merizow viewed premises as "special cases of assumptions" (p.105). He distinguishes problem posing from problem solving and that premise reflection pertains to the former. Black and Plowright (2010) also developed a framework for reflective learning that consists of three dimensions: source, target and purpose. They posited that sources of reflection can be various kinds of learning and professional practice experiences. Whereas targets are closely related to sources, they identified two general purposes of reflection, i.e., developing conceptual knowledge and understanding and improving professional practice.

The third approach in the development of models is identifying procedures of reflective learning (e.g., Ash & Clayton, 2004; Atkins & Murphy, 1993; Boud et al., 1985; Dewey, 1933). These models illustrate the steps or phases learners need to go through during the reflective learning process. Students engage in the phases no matter what level or category of reflection the tasks emphasize. In his seminal book, Dewey (1933) explicated five phases of reflective thought: suggestion, intellectualization, guiding idea or hypothesis, reasoning, and testing. Dewey emphasized on flexible use of the phases suggesting that there are no set rules on how they can be used and thus the possibilities of passing over some of them hurriedly, merging any of the phases, or relying on one or more of them for reaching a conclusion. Similarly, Boud et al (1985) suggested three main stages of the reflective process that could involve cycles and repetitions between stages. These stages are: (1) returning to experience; (2) attending to feelings; and (3) re-evaluating experience. They also identified four elements in the third stage of re-evaluation: association, integration, validation, and appropriation. Reviewing the literature on reflection, Atkins and Murphy (1993) also identified three key stages common to the different conceptions and models of reflection: inner discomfort or experience of surprise, critical analysis of situation, and development of a new perspective.

These different models provide valuable insights about what reflection entails and its uses in the instructional process. For example, hierarchical models help us understand the different level goals of reflection that we need to achieve in fostering reflection. They can also be valuable tools for assessing students' reflective work. Nevertheless, a closer look at the details of the models provides considerable challenges. In most hierarchical models, for instance, it is less clear where one level ends and the other begins. Such linear

presentation also presupposes that a higher level of reflection is less likely to be achieved before completing the lower level category. Also, there is no indication of how instructional approaches can be different or how context related factors influence the implementation of various levels of reflection. If we consider van Manen's model, for example, the ability to reflect on educational goals and their assumptions (practical reflection) may not be necessarily dependent on faithful application of empirical findings (technical reflection). Similarly, though Hatton and Smith (1995) suggested sequential development of the levels in preservice teacher education, it is less clear why dialogic reflection, for instance, should follow descriptive reflection or precede critical reflection.

Both Merizow's and Black and Plowright's categorical models are also important in that they suggest different areas students could engage in the reflective learning process. However, they are still limited in indicating instructional strategies that teachers can employ to engage their students in those aspects of reflection. Broad areas identified in relation to sources, targets and purposes of reflective learning (Black & Plowright, 2010) do not suffice to translate into instructional strategies.

When it comes to procedural models, Dewey (1933) provided a foundational work which much of the literature on reflection has been based upon. However, there has been numerous ways of interpreting his work that resulted in ambiguities in the concept of reflection (Clara, 2015). Procedural models allowed us to address important aspects such as emotional dimension of reflection (Boud et al., 1985) and provided a general guideline for reflective learning processes (e.g., Atkins & Murphy, 1993). Nevertheless, the procedures suggested by these stage-oriented frameworks are not sufficient to clarify what exactly the construct reflection entails and what pertinent instructional strategies can be used to effectively foster it in professional preparation programs. Given such ambiguities and variations in the literature, our review aimed at examining conceptions of reflective learning and instructional strategies for developing it from empirical studies.

Method

The focus of this review was on conceptions and instructional strategies for developing reflective learning in preservice teacher education. To obtain relevant articles for the review, two search approaches were employed. First, we conducted abstract search of the databases Education Source, ERIC, and PsychINFO using search terms: 'reflective learning' OR 'reflection' AND 'instructional strategies' OR 'teaching methods' AND 'teacher education' OR 'teacher training'. The search resulted in 274 hits. Second, a bibliographic mining of articles that were found relevant through the first search method was conducted to obtain widely cited articles. This second process resulted in 13 additional articles resulting in a total of 287 articles for analysis.

The abstracts of the resulting articles from the two search methods were screened to determine their relevance using inclusion/exclusion criteria. As inclusion criteria, we focused on (a) peer reviewed empirical studies (b) reflection or reflective learning and (c) area of preservice teacher education. Publications that are conceptual, focus on in-service teacher education, and deal with reflective teaching of school teachers were excluded. As our focus was on reflective learning experiences of preservice teachers, we excluded studies on in-service teachers as they tend to focus on evaluation of practice rather than instructional strategies for developing reflection. Despite the confusion on the use of related terms such as reflexivity, reflective thinking, reflective practice and reflection, all articles that used any variant of these terms were included so long as the studies focused on students' reflective engagement in preservice teacher education.

The screening of abstracts using the inclusion/exclusion criteria resulted in 32 articles for further analysis. Hence, the report of this review is based on these articles which were summarized using a spreadsheet. We engaged in inductive analysis of definitions of reflection and related instructional strategies. We used open coding to develop themes that represent conceptions of reflective learning and instructional strategies employed in the studies. More specifically, the constant comparative method (Glaser & Strauss, 1967) that involves coding data units into as many categories as possible (open coding) and comparing each subsequent data with previous data and then labeling similar themes with the same code were used. A study could be coded in more than one theme when it reflects multiple conceptions and/or employs different instructional strategies.

Results

Most of the studies (62.5%) were generally in preservice teacher education without a focus on particular disciplinary areas. Other studies focused on education of teachers in specific disciplinary areas which include: science teacher education (15.6%), language teacher education (12.5%) and physical education and aesthetics teacher education (9.4%). In preservice teacher education, preservice teachers' reflective abilities are usually fostered in two arenas: during coursework in the university and school-based training (Lamb, Lane, & Aldous, 2017). Most of the studies included in this review examined preservice teachers' reflection during both course

work and practicum (40.6%) or course work only (37.5%) components of teacher education. And, some focused on the practicum component only (21.9%).

Conceptions of reflective learning

Considering the purposes and nature of reflection, conceptualizations of reflective learning were grouped into: reflection as cognitive process of pondering over learning experiences to resolve complex issues (31.3%); reflection as retrospective review and examination of experience (21.9%); reflection as articulating and examining one's beliefs and assumptions (34.4%); and reflection as questioning and challenging taken-for-granted assumptions and socio-cultural contexts (9.4%).

In the first category of conceptions, the nature and purpose of cognitive processes involved during reflective engagement is emphasized. For instance, Naghdipour & Emeagwali (2013) considered reflective thinking as the use of cognitive faculties to resolve complex issues in learning. Other researchers such as Berghoff, Blackwell and Wisehart (2011), Fund (2010), and Mantle (2018) have adopted Dewey's (1933) and/or Moon's (1999) conception of reflective learning as a form of purposeful mental processing. A thoughtful consideration of dilemmas and alternative perspectives (e.g., Clara et al., 2019; Moore-Russo & Wilsey, 2014) and making rational choices (e.g., Beavers et al., 2017) also relate to these cognitive-oriented conceptions of reflection.

Reflective learning as metacognitive and self-assessment processes involves articulating and examining one's beliefs and assumptions in light of learning experiences (e.g., Alger, 2006; McGarr, McCormack, & Comerford, 2019; Nolan, 2008); thinking about thinking (e.g., Mortari, 2012); and evaluating one's learning and understanding strengths and weaknesses (e.g., Chetcuti, 2007; Martin, 2005). Metacognition refers to knowing about one's cognitive states and its operations (Merizow, 1991). Thus, whereas the first category of conceptions refers to the nature of thought processes acted upon objects of reflection, the target in this category is the thought process itself and its outcomes.

The third category is experiential and retrospective stance where reflection is understood as a process of looking back and reviewing practice with a view to its improvement (e.g., Aubusson, Griffin, & Steele, 2010; Harfor & MacRuar, 2008; Lamb, Lane & Aldous, 2017; Rodman, 2010). Rodman (2010), for instance, asserted that reflection refers to thinking about an occurrence and examining what happened and why it happened. In this perspective, reflection aims at gaining a better understanding of practice in order to improve it. In few other cases, reflection is also conceived as a transformative act and thus involves questioning and challenging taken-for-granted assumptions and socio-political contexts of educational discourse and practice (e.g., Bogner & Krums, 2017; Oner & Adadan, 2012). This fourth category differs from the second (reflective learning as a metacognitive and self-assessment process) in that it extends beyond questioning personal assumptions and involves challenging taken-for-granted assumptions at a broader societal or community levels.

Instructional strategies

The nature of sources or triggers of reflection is an important consideration in dealing with strategies for fostering reflective learning (Atkins & Murphy, 1993; Black & Plowright, 2010). This led us to first look into the general instructional contexts of reflective learning experiences. Our analysis indicated that instructional strategies for developing reflective learning were designed in three contexts: practice-related (62.5%), theory-related (27.5%), and personal experience-related (10%). The practice-related learning experiences involved enactive and vicarious learning experiences. In the case of enactive learning, students' reflections were triggered by their school experiences during placement for practicum and included teaching, observation of classroom teaching, and action research (e.g., Aubusson, et al., 2010; Binks et al., 2009; Harfor & MacRuar, 2008; Maaranen & Stenberg, 2017). For instance, the study by Binks et al. (2009) aimed at examining the use of storytelling for stimulating reflection on teaching practices. Preservice teachers were required to tell stories about events or experiences from their practicum each week.

Vicarious learning experiences include observation of animated teaching episodes (e.g., Moore-Russo & Wilsey, 2014), analysis of vignettes of practices of teaching cases (e.g., McGarr et al., 2019), and watching videotaped lessons (e.g., Lamb et al., 2017). In Moore-Russo & Wilsey's (2014) study, for example, preservice teachers were assigned to watch one animation each week over a period of five weeks. The animations portrayed secondary mathematics classroom instruction and were designed to serve as a condensed and common experience for collaborative reflection. In McGarr et al.'s (2019) study, preservice teachers were presented with vignettes of classroom practices that were written in terms of the type of classroom and school they expect to encounter. The researchers provided guiding questions that could elicit preservice teachers' emotional responses and evaluation of teacher's actions and thereby unearth their preconceived ideas about teaching.

With regard to theory-related experiences, triggers of reflection were concepts, ideas and theories presented by the instructor or provided for class discussion (e.g., Clarke, 2011; Fund, 2010; Mortari, 2012; Nelson et al., 2016) as well as suggested readings of articles, textbooks or policy documents related to the course of study (e.g., Berghoff et al., 2011; Chetcuti, 2007; Rocco, 2010). Fund (2010) designed his course to include brief expository lectures and plenary discussions. After each weekly meeting, students were required to submit written reflections concerning the lesson (Fund, 2010). Regarding personal experiences, students were presented with questions that required them to answer by reflecting on their personal encounters, assumptions and goals about teaching and learning (e.g., Bognar & Krumes, 2017; Nolan, 2008). Nolan's study, for example, employed reflective learning tasks to engage preservice teachers in recalling past experiences, memories, and critical incidents including their learning experiences.

In addition to the three broad contexts discussed above, the natures of specific learning activities that students engage in each context are different. Educators engaged students in different learning activities both in groups and individually. We identified six main themes from the nature of these learning activities. One of the most common learning activities that students were engaged in relates to the process of *reviewing and evaluating school teaching practices*. These practices took different forms: recorded or remembered lessons of their own teaching during practicum (e.g., Aubusson et al., 2010; Beavers et al., 2017; Roberts, 2018); lesson observations of teaching in schools (e.g., Ayan & Seferoglu, 2011; Mantle, 2018); and analysis of peers' videotaped lessons or micro-teaching lessons (e.g., Bognar & Krumes, 2017; Harfor & MacRuairc, 2008; Lamb, et al., 2017). Whether their own, their peers or school teachers' practices, reflections in this case mostly focused on describing and explaining how the instructional processes took place. In Beavers et al.'s (2017) study, for example, preservice teachers were engaged in telling a situation that went well and didn't go well during practicum.

Related to practicum experiences, educators also engaged preservice teachers in *identifying critical incidents and dilemmas during their practicum*. In this case, they were not expected to review and evaluate their practicum experiences as a whole but to identify one or two critical incidents they encountered during the process. In Berghoff et al.'s (2011) study, for example, preservice teachers were engaged in identifying and examining one critical incident or school practice that troubled them after they completed eight weeks of practicum and then generating other possible ways the dilemmas might have been resolved. Similarly, a study by Binks et al. (2009) reported reflective learning experiences that engaged preservice teachers in telling a story of significant experience during practicum placement in schools.

Another learning activity we identified from our review is *analyzing what was learned from the experience* (e.g., Chetcuti, 2007; Martin, 2005; Roberts, 2018; Rodman, 2010; Tan, 2006). For example, studies by Rodman (2010) and Martin (2005) focused on students' descriptions and examinations of what they have learned from field-based assignments. Roberts' (2018) study also reported students' analysis of what they have learned from their reflective writing against predetermined criteria.

Though very few, there are also studies that discussed the reflective process in terms of *sharing prior experiences and ideas and reconstructing beliefs and assumptions* (e.g., Nolan, 2008; Rocco, 2010). Nolan (2008), for example, engaged students in drawing, using metaphors, and creating montages to explain their assumptions and beliefs about teaching and learning. Relatedly, in Rocco's (2010) study, students were encouraged to link learning issues (course contents) to prior experiences.

In other cases, preservice teachers' reflective learning experiences focused on *self-assessment and meta-reflection* (e.g., Fund, 2010; Martin, 2005; McGarr et al., 2019; Mortari, 2012; Nelson et al., 2016). Here they were engaged in examining their own thinking and reflections mainly with the aim of identifying new insights and changes. In the study by Nelson and colleagues, students were encouraged to analyze changes in their own thinking due to course experience. Mortari's (2012) study also involved preservice teachers in class discussions with a focus on identifying the kind of mental awareness emerging during the discussion.

Last, engagement in reflective learning process was described in terms of *arguments and analysis made in relation to course content and activities*. For instance, students were tasked with reading literature and presenting well-reasoned arguments regarding the topics of the course in online discussions (Bognar & Krumes, 2017). Similarly, a study by Rocco (2010) described letter writing and dialoguing activity about issues of personal and professional interest from course contents.

Relations between conceptions and instructional strategies

We presupposed that the nature of instructional strategies for developing reflective learning would be selected and organized in light of how reflection was conceptualized in the studies. Hence, after we had identified the themes in conceptions of reflective learning and also in the components of instructional strategies, we examined the ways in which they might be related. The results indicate specific patterns only for one of the four themes

of conceptions of reflective learning. That is, in studies where reflection was conceived as a retrospective review and examination of experience, the nature of instructional strategies is clearly distinguishable. The focus of reflection in all of such studies was found to be practice-related experiences, both enactive and vicarious. Similarly, in most of the studies (71%) in this conception category, students were engaged in the process of reviewing and evaluating school teaching practices.

On the other hand, we found no specific patterns of instructional strategies for conceptions of reflection as cognitive process of pondering over learning experiences to resolve complex issues, as examining one's beliefs and assumptions, and as questioning and challenging taken-for-granted assumptions and socio-cultural contexts. In studies where such conceptions prevail, there appeared to be variations in the nature of instructional strategies organized and enacted for promoting reflective learning among preservice teachers. Relations between conceptions and strategies could not be analyzed for some of the studies because of lack of conceptual clarity.

Discussion

In general, the results indicate that the term reflection is used to refer to different meanings. It could be that definitions and conceptualizations of reflective learning emanate from variations in the epistemological perspectives of researchers. If this is the case, studies on the subject will benefit from explicit articulation of both the perspectives of researchers and their conceptions of reflection that guide the research process. The absence of explicit definitions in some studies and lack of relationship between conceptions and nature of instructional strategies could be suggestive of the ambiguities and complexities of research and practice in reflective learning. In an ambiguous construct like reflection, variations in conceptions are expected. However, both the breadth and depth dimensions (McGarr et al., 2019) should be considered in conceptualizing the term. The prevailing conceptions are predominantly oriented towards problem solving approaches. That is, both cognitive and experiential oriented conceptions entail engagement in reflective learning with the aim of solving instructional problems that preservice teachers may encounter. Nevertheless, deeper and critically reflective dispositions can be developed through not only problem solving but also problem posing orientations (Merizow, 1991). In such orientations, reflection involves making taken-for-granted situations problematic and questioning their validity rather than merely pondering over issues or retrospectively examining experience for purposes of problem solving.

Furthermore, despite the variety of instructional strategies evident from the review, it is noteworthy that most studies focused on the practicum component of teacher education to foster reflective learning. Providing preservice teachers with experiences of reflecting on teaching practices and problems is important for it serves as an induction to their profession. However, reflective learning experiences need to be designed for purposes beyond enculturation. Instructional strategies should encourage preservice teachers to examine educational issues with reference to alternative perspectives, their own values, beliefs and experiences, and the larger socio-cultural contexts. For example, although due consideration was given to examination of one's beliefs and assumptions in conceptualizing reflection, preservice teachers' actual reflective learning experiences mainly focused on reviewing and examining school teaching practices and experiences.

Personal experiences play a key role in shaping preservice teachers' professional identity. Thus, reflective learning activities should help them explore who they were, who they are and who they might be in the future. Their past educational and life experiences create deeply ingrained attitudes and beliefs about teaching, learning, and education (Alger, 2006; Nelson et al., 2016; Pajares, 1992). These calls for the need to provide more opportunities that encourage them to relate what they are learning to their autobiographies as learners and persons. Not only their prior experiences but also their current educational and life experiences significantly contribute to their professional identity development. With regard to their educational experiences in preservice teacher education, reflective learning tasks should encourage them to examine how instruction they are engaged embodies or relates to what they are learning about teaching and who they want to be. Also, though induction to the profession through reflection on how to teach is crucial to becoming a teacher, the concept and practice of reflection should extend to everyday experiences in the world. Preservice teachers should be given opportunities of examining learning contents and activities in relation to their everyday life. That is, they should be encouraged to reflect on relevant issues they encounter in everyday life in their communities. More critical and deeper reflective skills also need to be fostered through learning experiences that allow preservice teachers to examine the larger social, cultural, historical and political contexts that permeate educational practices. Such experiences could, for example, involve modeling and analysis of hegemonic assumptions and practices in education, examining social injustices that often inhibit learning in schools, questioning the ways students are categorized and their differences are represented, problematizing the relationship between hierarchies of power and privilege in everyday social life and in classrooms and educational institutions, etc.

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