

Examining teacher preparation and on-the-job experience: The gap of theory and practice

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Abstract

Teacher education programs are increasingly critiqued for their limited relationship to student teachers' needs and for their limited impact on practice. Many appeals are heard for a radical new and effective pedagogy of teacher education in which theory and practice are linked effectively. Teacher education programs need to bridge the “gap” between coursework and the realities of pre-service fieldwork and in-service teaching. Pre-service teachers need to experience coherence and integration among their courses, and between their coursework and fieldwork. It is more likely that practicing in real classroom settings can play a relatively more important role in helping teachers develop their noticing awareness and skills; certain kinds of their professional identities; and contextually-appropriate classroom management strategies and techniques; and pedagogical content knowledge (PCK).

Keywords: teacher education; pedagogical content knowledge; pre-service teachers; noticing; community of practice; professional identity

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1. Introduction

“No matter what kind of preparation a teacher receives; some aspects of teaching can be learned only on the job. No college course can teach a new teacher how to blend knowledge of particular students and knowledge of particular content in decisions about what to do in specific situation” (Feiman-Nemser, 2001, p. 18). What kind of preparation does pre-service teachers receive and which aspects of teaching may be learned only on the job?

Pre-service teacher preparation programs, also called initial teacher training or initial teacher education, vary greatly across countries. The structure, coursework, and field experiences of pre-service programs are important to consider when designing or reforming teacher training because they all contribute to the level of preparation. High-quality teachers need high-quality training, but many countries may need to consider cost-effectiveness in deciding on the specific combination of pre-service and in-service training experiences needed in order to deploy enough teachers for growing education systems (Lauwerier & Akkari, 2015). Teacher education is an on-going process which formally begins in the pre-service program and continues indefinitely throughout a teacher's career (Bilen, 2015). Beginning teachers enter the educational system only partially prepared for the tasks and responsibilities which they will be expected to take on.

2. Philosophies/traditions of teacher education programs

According to Darling-Hammond (1997) pre-service programs that prepare new teachers will play an especially important role during the next few decades. Most of the new teachers come from teacher education programs that have considerable structural variation in most countries. Morey, Bezuk, and Chiero, (1997) advocates that teacher education can be an undergraduate major or a program that is in addition to an academic major. There can be an expectation that the teacher education program can be completed within the traditional four/five years of undergraduate study or master's degree program (Darling-Hammond, Berry, & Thoreson, 2001). In the views of Cochran-Smith, Villegas, Abrams, Chavez-Moreno, Mills, and Stern (2015) programs for initial teacher preparation can be university or college based or located primarily in the field and can vary depending on the main purpose whether it is for certification or licensing. Irrespective of the purpose of the program, they tend to have several components in common, such as subject-matter preparation, usually liberal arts or general education for prospective elementary teachers and subject-matter concentration for prospective secondary teachers; a series of foundational courses, such as philosophy, sociology, history, psychology of education; one or more developmental, learning, and cognitive psychology courses; methods (how to) courses; and a sequence of field experiences (Goodlad, 1990).

What differs among the programs is the importance of the different components, the goals of the instructors for the program and the courses, the attitudes and beliefs that students bring to them. Researchers have identified four major philosophical traditions of practice dominated in teacher education (Zeichner & Liston, 1990; o'Loughlin, 2002; Smith, MacGregor, Matthews, & Gabelnick, 2009; Kumar, 2012; Martin, 2013). These philosophical traditions include: a philosophy/tradition that focus on the knowledge base of teachers of subject matter and their ability to transform that subject matter to promote students understanding. This also emphasizes on the academic knowledge of the teacher; a social efficiency tradition that emphasizes teachers' abilities to apply thoughtfully a “knowledge base” about teaching that has been generated through research on teaching, this focuses on the application of knowledge acquired by the teacher; a developmentalist tradition that stresses teachers' abilities to base their instruction on their direct knowledge of their students and their mental readiness for specific activities. This tradition focuses on the mental development of the teacher; and a social

reconstructionist tradition emphasizes on teachers' abilities to analyse social contexts in terms of their contribution to greater equality, justice, and elevation of the human condition in schooling and society. This tradition/philosophy stresses on the analytical abilities to the teacher (Zeichner & Liston, 1990; o'LoughLIN, 2002; Smith, MacGregor, Matthews, & Gabelnick, 2009; Kumar, 2012; Martin, 2013).

Although these traditions can act as useful empirical evidence for understanding the guiding principles for specific teacher education program, it is important to realize that most programs do not fit neatly within the categories (Zeichner, 1981). Although these traditions underlie teacher education programs, students are explicitly not aware of them in most cases (Zeichner & Liston, 1990). The actual experiences of many prospective teachers often hide the philosophical or ideological notions that guide their preparatory years, which color evaluations of the quality of pre-service experiences.

In the views of Goodlad (1990) political factors have strong effects on teacher education. Many regulatory intrusions from schools, colleges, accreditation boards, and state and federal departments of education have either negative/positive effect on teacher education programs. The regulations often interfere with attempts to develop coherent and innovative programs that can prepare teachers to teach. The majority of teachers are educated in state colleges and universities, the budgets of which are controlled by state legislators and governors, and they teach in public schools that are affected by local politics through school boards, as well as by the same state-wide influences (Elmore & Sykes, 1992). It is not surprising that these many forces do not lead to the most innovative teacher education programs.

2.1 Challenges with the current pre-service teacher preparation programs

Challenges experienced by pre-service teacher preparation programs have been an interest for researchers in different settings. The traditional teacher education programs have been critique including the pressure of inadequate time within a 3- year diploma certificate or 4-year undergraduate degree, makes it very difficult to learn enough about both subject matter and pedagogy (Darling-Hammond, 2000). With a similar focus, Bernshausen and Cunningham (2001) identified the fragmentation of content and pedagogical coursework and the divide between university and school-based training as another challenge of the current teacher education programs which offer disconnected courses that novices are expected to pull together into some meaningful coherent whole. The weak content of many courses that pass on traditions instead of knowledge developed systematically (Darling-Hammond, 2000). Although, teachers are supposed to excite students about learning, teacher preparation methods course are often lecturing and recitation. Prospective teachers who do not have 'hands-on', 'minds-on' experiences with learning are expected to provide these kinds of experiences for students (Mead, Aldeman, Chuong, & Obbard, 2015). Also, Bernshausen and Cunningham (2001) noted that the need to satisfy certification requirements and degree requirements lead to programs that provide little intensity in subject matter or in educational studies, such as research on teaching and learning. There are not enough subject-matter courses included in teachers' preparation.

According to the National Commission on Teaching and America's Future (1996) the effects of these problems can be seen in the complaints that pre-service teacher education students have about foundations courses that seem disjointed and irrelevant to practice, or are 'too theoretical' and have no bearing on what 'real' teachers do in 'real' classrooms situations with 'real' students (Darling-Hammond, 2000). They also complain that method courses are time consuming and without intellectual substance. When method courses explore the theory and research bases for instructional methods and curricula, the students complain that they are not oriented enough toward practice. They also stated that, these problems in pre-service education hinder lifelong learning in at least two ways. First, a message is sent to prospective teachers that research in education, whether on teaching or learning, has little to do with schooling and, therefore, they do not need to learn about the findings from research (Mead et al., 2015).

Secondly, the importance of viewing themselves as subject-matter experts is not emphasized to teachers,

especially teachers in the early and middle grades: they fall into believing the saying that ‘those who can, do; those who cannot, teach’. Teachers are not encouraged to seek the knowledge and understanding that would allow them to teach academically rigorous curricula. Teachers who attend institutions that provide a strong preparation for teaching also face major challenges after they graduate (Adu-Yeboah, 2010). They need to make the transition from a world dominated primarily by college courses, with only some supervised teaching experiences, to a world in which they are the teachers; hence, they face the challenge of transferring what they have learned. The involvement of strong levels of initial learning, transfer does not happen immediately nor automatically (Akyeampong & Lewin, 2002). People often need help in order to use important knowledge that they have acquired, and they usually need feedback and reflection on their knowledge so that they can try out and adapt their previously acquired skills and knowledge in their new environments (Feiman-Nemser, 2001).

However, in these environments, the schools have a very significant effect on the beliefs, knowledge, and skills that new teachers will draw on. It is the difficult transition from student teacher to novice teacher (Shulman, 1987). Many of the schools that teachers enter are organized in ways that are not consistent with new developments in the science of learning. The schools often facilitate ‘covering the curriculum’, testing for isolated sets of skills and knowledge, and solo teaching, with limited use and understanding of new technologies (National Commission on Teaching and America’s Future, 1996). The instructional methods, curricula, and resources can be very different from the ones they learned about in teacher education programs as first-time student teachers enter classrooms to face the real classroom situations. Although beginning teachers are often anxious to begin their student teaching and find it the most satisfying aspect of their teacher preparation (Hollins, 1995), the disagreement between this experience and their course work supports the belief that educational theory and research have little to do with classroom practice.

Most novice teachers are required to ‘sink or swim’ in their initial teaching placement (National Commission on Teaching and America’s Future, 1996). New teachers are often given the most challenging assignments such as; more students with special educational needs, the greatest number of class preparations of which some is outside of their field of expertise, and many extracurricular duties and they are usually asked to take on these responsibilities with little or no support from administrators or senior colleagues. According to Goodlad (1990) the components of teacher education programs which consist of collections of courses, field experiences and student teaching, tend to be disjointed. They are often taught or overseen by people who have little ongoing communication with each other. Even when the components are efficiently organized, there may be no shared philosophical base among the faculty. Moreover, grading policies in college classes can undercut collaboration, and students rarely have a chance to form teams who stay together for a significant portion of their education (Barrows, 1985).

3. Some aspect of teaching taught in teacher education programs

Teacher education programs are the fundamental periods for prospective teachers to begin to think like teachers and to learn how to teach. These programs should model the complexities and challenges of teaching in order to help prospective teachers develop the necessary professional knowledge (Akyeampong & Lewin, 2002). Pre-service teacher education programs are of necessity limited in time and scope and therefore are unable to address adequately all the skills and knowledge a practicing teacher requires. In general, these programs are better able to impart academic knowledge of pedagogy, the educational sciences, and the disciplinary areas (Westbrook, Brown, Pryor, & Salvi, 2013).

Teacher education programs are less able to impart practical knowledge and skills which are acquired through actual experience. The component of the training program of which main purpose is to develop practical skills by exposing the student to different teaching situations is the practicum (Durrant, 2019; Korthagen, Loughran, & Russell, 2006). The practicum experience exposes the student teacher to develop teaching experience such as classroom management skill, pedagogical skills, preparation of lesson plan, development of subject matter knowledge, understanding the nature of student and the school and to examine their theoretical

knowledge acquired in the university/college in real life situation (Darling-Hammond & Baratz-Snowden, 2007). The linking of theory and practice is one of the crucial issues in teacher education and systematic, purposeful reflection is considered vital in this process (Korthagen, Loughran, & Russell, 2006).

4. Some aspect of teaching that may be developed on teaching practice

Even though, pre-service teachers learn a lot from their universities/colleges about various theories, principles and practices and also practical experiences from the practicum, there are still some aspect of teaching that are developed over some period of practice on the job of teaching (Feiman-Nemser, 2001).

4.1 Noticing skills

Noticing skills is the ability to develop awareness of classroom interactions so that the beginning teacher moves from paying attention to surface-level features to being able to discern more substantive and significant interactions. Blomberg, Stürmer, and Seidel (2011) defined noticing as the ability to first observe and then make professional sense and judgement of events in a classroom. It is the skill of noticing and interpreting significant features in classroom interactions and responding to the complexity of classroom environments (Sherin & van Es, 2009). Developing significant noticing is a key priority for professional learning for beginning teachers. Noticing includes reflection-in-action and reflection-on-action. Reflection-in-action (in-the-moment decisions) entails teachers' ability during a lesson to reshape what they do while they are doing it, think on the heat of events and use their knowledge and experience to understand the situation and act on it (Schon, 1987).

Thorough preparation and anticipating learner strategies and misconceptions provide points of reference for reflection-in-action and enable didactical flexibility. Reflection-on-action (looking back), on the other hand, entails the often-documented looking back after an action or an experience and reflecting on what happened and why it happened (Schön, 1987). The combination of these notions plays an important role in preparing teachers to bridge the gap between theory and practice to become reflective practitioners. This aspect of teaching can be learnt on the job of teaching. However, pre-service teachers often do not know what to reflect on or how to reflect in lessons they observe. Without structured support from experience teachers and appropriate framing, pre-service teachers' analyses tend to focus on the actions and behaviors of the teacher rather than student thinking, learning and sense-making and tend to be judgmental and lack evidential support and coherence (Barnhardt & Van Es, 2015). Noticing can be described as one of the core practices in teacher education and can provide appropriate support and framing for the development of productive reflection on learners' reasoning during lessons (Choy, 2016). It is well to note that, it is more likely that practicing in real classroom settings can play a relatively more important role in helping teachers develop their noticing awareness and skills.

4.2 Professional identity in the community of practice (CoP)

Professional identity as an ongoing process of integration of the 'personal' and the 'professional' sides of becoming and being a teacher (Beijaard, Meijer, & Verloop, 2004). Emergence and development of one's professional identity is a long, continuous and ongoing process which happens in contextual settings. Bastick (2000) claims that professional identity is based on three components such as, awareness of one's personality as a representative of a certain profession; searching for meaning in the respective profession and the professional ambitions one has or perceives. Previous and current experiences play a great role into forming beliefs, professional images, knowledge and skills.

Danielewicz (2001) posits that teacher education concerns the formation of professional identity. It fosters the transition from being students of teaching to becoming teachers. It is important to note that when students enroll in a teacher education program, they are not yet teachers. However, by the end of the training period they have adopted an identity as teachers. Although this identity is not fixed and is shaped or transformed during a teacher's life of teaching, a teacher education program is vital by virtue of awarding a teaching degree, as well as providing pedagogical and subject knowledge. The professional identity in the community of practice may be

developed on the field of teaching.

According to Wenger (1999) the concept of identity during the pre-service preparation is formed, shaped, or transformed as teachers participate in a teacher community. A community of practice is a group of people who share a common ideas and pursue mutual goals. Wenger further based the concept of community of practice on the fact that teachers engage in and pursue common goals together, interact with each other and with the world accordingly. Thus, teachers learn and over time, this collective learning results in practices that reflect both the pursuit of the goals and the attendant social relations. These practices are thus the property of a kind of community created over time by the sustained pursuit of a shared enterprise. These kinds of communities are called Communities of Practice (Wenger, 1999).

Clarke (2008) argued that community of practice consists of three dimensions: mutual engagement, which talks about the participation in an endeavor or practice whose meanings are negotiated among participants; joint enterprise which refers to the focus of activity that links members of a community of practice. This is represented, for example, in the negotiation between pre-service teachers and supervisors about lesson planning, assessment, or lesson development; and shared repertoire, that is, creation of resources for negotiating meaning (Wenger, 1999). He also illustrates how routines, words, tools, ways of doing things, stories, gestures, symbols, actions, or concepts that the community has produced or adopted in the course of its existence are representations of a shared repertoire.

Professional identity in the community of practice can be developed through long and continuous process of learning. Bastick (2000) further stated that, teachers shape their professional identities by participating in and interacting with other members of a teacher community. The first affiliation to this community of teachers is truly confirmed when a student makes the decision to choose teaching. This affiliation is the beginning of a long journey of constructing, sustaining and transforming a professional identity. The meaning of being a teacher evolves as a trajectory that is shaped and transformed as teachers gain experience and professional recognition (Clarke, 2008). In teacher education, much research literature demonstrates that knowledge of the self is a crucial component in the way teachers interpret and construct the nature of their work (Day, Kington, Stobart, & Sammons, 2006) and that events and experiences in the personal lives of teachers are intimately linked to the performance of their professional roles (Day, 2008). Teacher identity is not only constructed from technical and emotional aspects of teaching (classroom management, subject knowledge and pupil test results) and their personal lives, but also can occur as the result of an interaction between the personal experiences of teachers and the social, cultural, and institutional environment in which they function on a daily basis (Grossman, Hammerness, & McDonald, 2009; Slegers & Kelchtermans, 1999). It is more expected that practicing in real classroom settings can play a relatively more important role in helping teachers develop certain kinds of their professional identities in the community of practice.

4.3 Effective classroom management

Many teacher education programs recognize the need for training in the area of classroom management but does not provide courses to help novice teachers develop those skills (Baker, 2005). Baker further stated that, the ability of teachers to organized classrooms and manage the behaviors of students is critical to achieving positive educational outcomes. Although, sound behavior management does not guarantee effective instruction, it establishes the environmental conditions that make effective teaching possible. Equally, highly effective instruction reduces, but does not do away with classroom behavior problems (Emmer & Stough, 2001). Classroom organization and management competencies significantly influence the determination of new teachers in teaching careers (Ingersoll & Smith, 2003). New teachers typically express concerns about lacking the effective means to handle the important disruptive behavior of students in the classroom (Evers, Tomic, & Brouwers, 2004).

In addition, inadequate preparation and inadequate professional development are major influencing factors

to the classroom management problems faced by new teachers. Although, the importance of effective classroom organization and behavior management is widely acknowledged by educators, many new teachers complained of inadequate training and little assistance from colleagues and supervisors in establishing positive and productive classroom environments (Baker, 2005). Teacher educators insist that their preparation programs teach classroom organization and behavior management skills, but the indication is that such skills are not taught thoroughly or with adequate supervision in a real classroom situation (Siebert, 2005). This skill is developed by the novice teacher over time of continuous teaching and needs to be supervised by experienced teachers. Practicing in real classroom settings can likely play a relatively more significant role in aiding teachers to develop their contextually-appropriate classroom management strategies and techniques.

4.4 Pedagogical Content Knowledge (PCK)

Teachers ought to have extensive command of the material and good teaching skills, since the success of one's learning is dependent on a teacher (Kadarisma, Senjayawati, & Amelia, 2019). Teaching and planning to teach any subject is a highly complex cognitive activity in which the teacher must apply knowledge from several domains (Wilson, Shulman, & Richert, 1988). Differentiated and integrated knowledge based teachers will have greater ability than those with limited and fragmented knowledge, to plan and enact lessons that help students develop deep and integrated understandings (Smith & Neale, 1989). Several researchers have supported the statement that teachers' knowledge and beliefs have a profound effect on all aspects of their teaching, as well as on how and what their students learn (e.g., Hashweh, 1987; Nespor, 1987; Bellamy, 1990; Magnusson, 1991; Smith & Neale, 1989). Some of these studies were framed by conceptualizations developed by Shulman and his colleagues of the diverse knowledge domains that teachers use when planning and teaching (Grossman, 1990; Shulman, 1986, 1987; Wilson, Shulman, & Richert, 1988). A major contribution of this formulation of the knowledge base for teaching was its acknowledgment of the importance of subject-specific knowledge in effective teaching. Pedagogical content knowledge was identified as a type of knowledge viewed as unique to the profession of teachers (Magnusson, Krajcik, & Borko, 1999).

The term content knowledge refers to the body of knowledge and information that teachers teach and that students are expected to learn in a given subject. Content knowledge generally refers to the facts, concepts, theories, and principles that are taught and learned in specific academic courses that students are supposed to learn in school (Angeli & Valanides, 2009). Shulman (1987) defined pedagogy as the theories and principles of teaching and learning; having knowledge about teaching, an understanding of how particular topics, problems, or issues are organized, presented, and adapted to the diverse interests and abilities of learners and the ways of representing and formulating the subject that makes it understandable to others by the teacher. The teacher education programs offer both content course and pedagogical course separately to student teachers. This makes it very difficult for novice teachers to combine both the content knowledge and the pedagogical knowledge in the normal classroom situations. Akyel (1997) experienced teachers possess a more varied range of instructional options when responding to student cues, whereas novice teachers interpreted learners' initiations as obstacles and rather focused on maintaining the flow of instructional activities.

Pedagogical Content Knowledge (PCK) proposed by Shulman (1987) to reduce teachers' misconceptions is one aspect of teaching that can be learnt on the job of teaching. PCK is a blending of content and pedagogy in order to enhance the understanding of how particular topics, problems, or issues are organized, represented, and adapted to the diverse interests and various levels of abilities of learners (Shulman, 1987). The important skill that a teacher should possess is the capacity to transform the knowledge to be taught to the students in a way that could be easily understood. An actual teaching should not only contain the teacher's skillful demonstration of his/her knowledge but should also include the ability to guide the students to understand meaningfully the content of the knowledge (Brookhart, 2011). This shows the importance of PCK in instruction of any classroom. Shulman and Grossman (1988) divided knowledge into two components; substantive knowledge - the key facts, concepts, principles and explanatory frameworks in a discipline, which are some of the essential component of teaching which are developed at the initial teacher preparation of teacher education institutions, and syntactic

knowledge - the rules of evidence and proof within a discipline.

Over the years, researchers have developed major interest in the nature of teachers' knowledge, as all the different components of knowledge intertwined in the mind of the teacher are found to affect and be products of their classroom behaviors (Borg, 2003; Freeman, 2002; Van Driel, De Jong, & Verloop, 2002). Shulman (1999) formulates teachers' knowledge base as domains of scholarship and experience from which teachers may draw their understanding. The Pedagogical Content Knowledge (PCK) represents the combination of content knowledge and pedagogical knowledge of the teacher into an understanding of how particular topics, problems or issues are organized, represented and adopted to the diverse interests and abilities of learners and presented for instruction (Shulman, 1999). The teacher should first and foremost comprehend the subject matter knowledge with a degree of flexibility and adaptability that enables him/her to transform that knowledge into forms that are pedagogically powerful and yet, adaptive to the variations in ability and background presented to the students (Shulman, 1987).

However, making the transition from personal beliefs about content to thinking about how to organize and represent the content of a discipline in ways that will facilitate students understanding is one of the most difficult aspects of learning to teach (Veal, 1999). According to Gatbonton (2000) teacher education programs may accelerate the speed with which teachers can acquire the knowledge and skills needed for active teaching. Novice teachers are able to acquire the larger categories of pedagogical knowledge that inspire active teaching behaviors, along with passive teaching activities. However, teachers need more time and experience to attain the ability to apply this knowledge in the real classroom situation (Gatbonton, 2008). PCK is the knowledge that teachers develop over time, and through experience, about how to teach particular content in particular ways in order to lead to enhanced student understanding. Therefore PCK is one aspect of teaching that may be learned solely on the field of teaching.

5. Conclusion

Teacher education programs are the fundamental periods for prospective teachers to gain theoretical and some practical knowledge to think like teachers and to learn how to teach, it does not adequately prepare them for the complexity of professional work. When they enter the profession, novice teachers must rapidly implement the knowledge they have acquired and develop appropriate skills and attitudes for the work. The teacher education programs should model the complexities and challenges of teaching in order to help prospective teachers develop the necessary professional knowledge for the normal classroom situations. The existing research on best practices in teacher education consistently support the integration of theory and practice, noting that the successful integration of theory and practice is potentially both the most challenging and most crucial aspect of effective teacher education. Teacher education programs need to bridge the "gap" between coursework and the realities of pre-service fieldwork and in-service teaching. Pre-service teachers need to experience coherence and integration among their courses, and between their coursework and fieldwork.

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