
Title	Developing student teachers' critical thinking and professional values: A case study of a teacher educator in Singapore
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Source	<i>Asia Pacific Journal of Education</i> , 37(4), 535-551
Published by	Taylor & Francis (Routledge)

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This is an Accepted Manuscript of an article published by Taylor & Francis in *Asia Pacific Journal of Education* on 19/09/2017, available online:

<http://www.tandfonline.com/10.1080/02188791.2017.1386093>

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Citation: Low, E. L., Hui, C., & Cai, L. (2017). Developing student teachers' critical thinking and professional values: A case study of a teacher educator in Singapore. *Asia Pacific Journal of Education*, 37(4), 535-551. <http://dx.doi.org/10.1080/02188791.2017.1386093>

Developing student teachers' critical thinking and professional values: A case study of a teacher educator in Singapore

Abstract: This paper explores how thinking and values in student teachers are cultivated in the Singapore context, via a case study of a teacher educator selected based on having won excellence in teaching commendation awards. The study adopts a qualitative case study methodology (i.e. interviews with the teacher educator and her student teachers) and uses the theoretical lens of modelling to argue for values pedagogy in teacher education. The findings of this research shed light on the importance of teacher educators modelling the pedagogical practices that they endeavour to impart in their pre-service classrooms. Additionally, this study emphasises the importance of teacher educators as role models who truly embody the values that they would like to cultivate in student teachers in the 21st century education landscape.

Key words: modelling, critical thinking, professional values, values pedagogy

Introduction

In an ever-changing world, what must we do to enable our children to meet the demands of not only today but also the future? It is argued that teacher education is the starting point (Shirley, 2017). Therefore, there is a call for reforms in teacher education to prepare student teachers who are able to meet the needs of 21st century learners (e.g., Goodwin, 2010). However, amid all the demands for change in teacher education, we should ask what should remain constant (Sherman, 2013). In any stage of social development, values such as integrity, respect, care, and responsibility are highly valued. In addition, the ability to assess different options, to think critically, and to make sound decisions is never out-of-date. Therefore, teacher education needs to prepare teaching professionals who are thoughtful, reflective, inquiring educators, and custodians of societal values (Liu, Koh, & Chua, 2017; Tan, Liu, & Low, 2012). They can in turn bring about the desired educational student outcomes needed to function effectively in the 21st century.

It is reasonable to assume that the cultivation of critical thinking and values in student teachers relies on teacher educators, given their important role as models of professional practices and values. However, there is little research on how critical thinking and values can be cultivated in student teachers via the role model of teacher educators. This study aims to fill the research gap through a case study of an awarding-winning teacher educator based on exhibiting teaching excellence in Singapore. It explores the factors that can contribute to successful cultivation of thinking and values in student teachers. Essentially, this study aims to illuminate the relationship between teacher educators' characteristics, their practices and student teachers' professional growth. The work of a teacher educator who aims to cultivate student teachers' thinking and values can be seen as central to student teachers' lifelong development as a professional and as a person (Tan, Low, & Sim, 2017). The study posits that what teacher educators do, how they do it, and who they are provide the 'soil' for student teachers to grow their thinking and values (Blakey, 2015). We adopt the theoretical lens of 'modelling', which is believed to be a key mediator between teacher educators' teaching and student teachers' learning (Loughran & Berry, 2005).

Theoretical background

Critical thinking in teacher education

Critical thinking has been a very elusive term to define and we may end up with abstract and often contestable ideas when we try to define it with any precision (Facione, 1990). As summarised in Blakey, Harland and Kieser (2014), the concept has been used to refer to a skill or ability, logical thinking or reasoning, reflective thinking, and creative or lateral thinking. This paper follows Dewey's (1964) conceptualisation of critical thinking as a habitual disposition of mind in the process of knowledge seeking. It involves an active and deliberate seeking out of the basis of knowledge or beliefs and aims to find sufficient support for the knowledge or belief (Vagle, 2009). Critical thinking is a method of knowing, as described by Dewey (1964):

Only by taking a hand in the making of knowledge, by transferring guess and opinion into the belief authorised by inquiry, does one ever get a knowledge of the method of knowing. (p. 188)

Despite being challenging, Dewey (1997) believes that over time one can be trained to have effective habits of critical thinking. Bauman (2001) argues that the key role of tertiary learning (and therefore teacher education) is to break down regularity, prevent habitualisation, and rearrange the fragmentary experiences into new patterns. The new patterns (habits of mind) "have the potential to guide learners in the essentials of adaptability, flexibility, and willingness to break free from habit" (Dyson, 2010, p. 6). We contend that student teachers need to engage in critical reasoning, at least in the areas that they specialise, and to develop a habit of mind to think critically in order to ensure effective teaching when they are in schools. An important role of teacher educators is to support student teachers to think effectively in learning to teach, and throughout their career, rather than simply train them as competent technicians (Barnett, 1997). Teachers ought to be "constantly looking out for new ideas and practices, and continually to refresh their own knowledge" (Tan, 2006, p.90). Through critical thinking, student teachers learn what best practices are for their students and become more effective in teaching (Robichaux & Guarino, 2012).

On an important note, the essence of criticality goes beyond 'thinking' in a narrow sense (Tan, 2006; Barnett, 1997). Firstly, it is important to avoid the tendency to reduce critical thinking to skills, strategies, mental processes or procedures (Tan, 2006), although they are important for various learning processes such as interpretation, analysis, inference, explanation and self-regulation (Facione, 1990). Endres (1996) also cautioned against the tendency of regarding critical thinking as a fixed set of rules that can be used to solve problems. Secondly, proponents of critical thinking consider certain aspects of attitude and disposition as requisites for effective critical thinking. Siegel (1988) stresses the importance of the spirit to seek reasons and evidence. Some of the dispositions that support critical thinking are being inquisitive, having a desire to be well-informed, and being open-minded and fair-minded. Thirdly and perhaps more importantly, Barnett (1997) considers critical thinking to be even broader than reasoning and dispositions. He proposed the idea of 'critical beings', which denotes education's moral obligations and the role in developing students' lifelong skills. Education for critical being will require a critical reflection of both personal and professional values (Blakey et al., 2014). Next, we will discuss how we define values and the importance of them in teacher education. Additionally, it will also explain how a teacher's values can influence the cultivation of student thinking.

Values in Teacher Education

The development of values in student teachers is regarded as an important role of teacher education. For example, the National Council for Accreditation of Teacher Education

(NCATE) standards made the development of values an explicit obligation of teacher educators in the USA (NCATE, 2002). The Singapore teacher education model adopts a values-driven paradigm that focuses on the integrated development of student teachers' values, knowledge and skills (Liu et al., 2017). To Dewey (1944), it is clear that we "ought to live in a manner that enhances our growth through the application of our thinking to things already known for the purpose of improving social conditions" (p. 344). Characterising the values dimension of education in Deweyan fashion, Hansen (2001) argues that "[c]onduct in teaching constitutes a pattern of action that supports meaningful teaching and learning" (p. 39). He contends that "the moral quality of knowledge lies not in its 'possession,' ... but how it can foster a widening consciousness and mindfulness" (p. 59). Moreover, the development of values must not be an add-on feature, but be inherent in the process of education (Sockett, 2006).

Similar to critical thinking, different theorists and researchers defined professional values differently. In addition, it is often used interchangeably with terms such as 'morals', 'personality traits', 'attitudes', 'beliefs', 'dispositions', and 'virtues' (Carr, 2010; Cheryl & Kathryn, 2008). In this paper, we utilise a broad and encompassing definition by NCATE (2001):

[T]he values, commitments, and professional ethics that influence behaviours towards students, families, colleagues, and communities and affect student learning, motivation, and development as well as the educator's own professional growth. Dispositions are guided by beliefs and attitudes related to values such as caring, fairness, honesty, responsibility, and social justice. For example, they might include a belief that all students can learn, a vision of high and challenging standards, or a commitment to a safe and supportive learning environment. (p. 53)

Therefore, professional values are a complex set of virtues or qualities considered positive and appropriate to have, as well as the actions through which these virtues or qualities can be communicated to students (Harrison, 2006). The emphasis on values requires teacher educators to carefully reconsider their pedagogical practices. Habermas (1987) asserts that any legitimate education calls for a values-laden pedagogical environment and discourse. As elaborated by Lovat, Dally, Clement, and Toomey (2011), this values pedagogy saturates "the learning experience with both a values-filled environment and explicit teaching that engages in discourse about values-related content" (p. 68). However, as critiqued by Lovat et al. (2011), teacher education tends to be conservative rather than pro-active in employing pedagogical practices that are being overturned by modern schooling and educational research. Higher education (including teacher education) has been criticised as doing lip service to the preparation of students for the process of learning about learning and for life (Dyson, 2010; Lovat et al., 2011). The absence of effective values pedagogy in teacher education will impact negatively on its potential to nurture the kinds of teachers needed to achieve its visions of holistic education for students in schools. In other words, attempts to prepare student teachers to educate productive and responsible citizens is likely to become meaningless if teacher educators cannot credibly enact values pedagogy in teacher education classrooms (Wilkinson, 2007). In sum, "having professional values and living by them in practice" (Heilbronn, 2010, p.8) are an essential requirement for teacher educators.

Further highlighting the importance of values pedagogy in teacher education, professional values is closely linked to the development of critical thinking. Tanner (1999) suggests that the impact of a teacher's values on his/her students can be more profound than the 'formal' teaching methods that they might have used. The power of teacher educators' embodied values in influencing student teachers is also supported by Howitt (2007). He

suggested that the teacher educator is central to the science teaching experiences that occur in a science methods course because they are directly responsible for all aspects within that course, including course structure, learning experiences and assessment. Although limited, there is some empirical evidence suggesting the positive outcomes of values pedagogy in higher education and teacher education. In the field of medical education research, Blakey (2015) found that two values held by the teacher (*caring* and *valuing of reflective thinking*) influenced the development of students' critical thinking. Students in his study seemed to better cultivate their critical thinking as a result of their teacher's caring about them, and as a result of the teacher's valuing the importance of reflective thinking.

Educators in Howitt (2007) and Blakey (2015) served as models and guides to their students. Therefore, we propose that a powerful realisation of values pedagogy is that teacher educators can become models and guides in the classroom, which can help the realisation of cultivating professional values and critical thinking among student teachers.

Teacher Educators as Models

Our paper argues that the cultivation of critical thinking and professional values in student teachers can be better achieved if teacher educators become models in their classrooms. Teacher education has a dual layered nature – it is teaching about teaching the learner (Loughran & Berry, 2005; Swennen, Lunenberg, & Korthagen, 2008). Teacher educators not only teach a subject (e.g. methods course), but also function as role models for teaching (Lunenberg & Korthagen, 2005). Therefore teacher educators need to engage with the concept of 'modelling' in their teaching practice (Swennen et al., 2008). They need to act congruently - 'teach as they preach' and explain the rationale behind their modelling (Loughran & Berry, 2005). If teacher educators do not explain their pedagogical choices and model the pedagogies they promote, it is unlikely that student teachers will change their pedagogical beliefs and practices. Fourie and Fourie (2015) found that when teacher educators do not model the expected roles of teachers, they failed to prepare student teachers adequately to fulfil their future roles as teachers.

Modelling has been found to be important in cultivating student teachers' professional values. The values that teacher educators display in their pedagogies are part of the values curriculum (Tomlison & Little, 2000). Carr (2011) argues that virtues such as courage, patience, integrity, and justice are requisites for productively relating to students in a learning environment. Corroborating this argument, Goldstein and Freeman (2003) found that student teachers' understanding of 'teacher caring' was greatly influenced by the relationship they have with their teacher educators. Kim and Schallert (2011) also showed how a teacher educator's passion for what he was doing and his caring for the student teachers strengthened their expectations of themselves and their motivations to learn.

Modelling is similar to what Dewey (1969) called 'experimental copying' – a process by which a student learns to think by copying or repeating what an expert teacher does. In addition, a student will gradually internalise these processes and think in a manner out of their own volition. Vygotsky (1986) also discussed how students could learn from teachers' modelling the thinking they want their students to develop. This further confirms that 'experimental copying' is a useful way to cultivate student teachers' thinking.

However, it is important to make a critical distinction between modelling and indoctrination. Arthur (2003) defined indoctrination as "to teach something that is true or universally accepted regardless of evidence to the contrary or in the absence of evidence at all. It is a pejorative term" (p. 37). This definition demonstrates two key features of indoctrination: 1) the push for uncritical acceptance of ideas, and 2) the eschewing of evidence (Sears & Hughes, 2006). Sears and Hughes (2006) pointed out the difference between indoctrination and education:

If indoctrination is the closing down of alternatives through the promotion of single, unassailable views and the shunning of evidence, then it seems to us that education is the opposite; the opening of possibilities through engagement with evidence. For the purposes of argument, then, we define education as the opening up of possibilities through the exploration of alternative understandings, the critical application of evidence and argument and the development of the skills and dispositions necessary to act on the possibilities. In short, we see indoctrination as a process that narrows and limits possibilities and education as a process that broadens and opens up possibilities. (p. 4)

Our definition of modelling in this paper aligns with the essentials of education advocated by Sears and Hughes (2006). Modelling involves an attempt to reduce students' dependence on the teacher and broaden their ability to act autonomously. We regard modelling (of critical thinking and professional values) as social and positive, rather than prohibitive and prescriptive. Our concern is not just with how the teacher educator demonstrates effective pedagogical practices and display values, but with influencing the student teachers' value commitments and potentially their future way of life.

By contrast, modelling of behaviours or processes in isolation may be insufficient to achieve educational goals (Blakey, 2015). Browne and Freeman's (2010) research on teaching suggests that modelling of thinking may fail even with the support of other strategies (e.g. explicit questioning). In his study on the cultivation of values in medical education, Blakey (2015) found that modelling could sometimes be perceived as 'inauthentic' or 'acting'. That is, a teacher may model something in one way, yet without believing it fully. This inauthenticity might have negative implications on the effectiveness of modelling. Brookfield (1987) referred to this as 'effective vs ineffective modellers' and pointed out that ineffectiveness originates from the lack of authenticity and integrity in their actions. Essentially, a teacher needs to embody the values (e.g. caring) they wish their students to have and be a living example of these values. It is the teachers' value systems that generate positive influence on their students. Students are more likely to respond to teacher behaviours that are natural, pervasive and authentic (Blakey, 2015).

Research Gaps

Despite the importance of modelling, this has not been studied much in research on teacher education. It is important to research the practice of teacher educators for a number of reasons. First, despite the fact that teacher educators are believed to be the lynchpins in educational reforms (Cochran-Smith, 2003; Kosnik, Menna, Dharamshi, Miyata, & Beck 2013), they are a rather under-researched group (Kosnik et al., 2013; Murray & Male, 2005). Little systemic research has been undertaken to inform us about the fundamental characteristics of the professional lives of teacher educators (e.g. who they are, their dispositions, teaching and research practices, and professional development) (Martinez, 2008). Limited knowledge on teacher educators hinders the recruitment and professional learning of this very important group of people within the education system. Specifically, it is important to know which previous experiences are helpful to teacher educators and which of their qualities have the most influence on student teachers' learning. Secondly, there exists a large amount of research on teacher education programmes per se (e.g., the curriculum, design and philosophy, its impact on student teachers' competence development, assessment measures of effectiveness, and practicum component, etc.). However, research in these areas "overlooks the teacher educators who 'deliver' these programmes" (Kosnik et al., 2013, p. 525). Reforms in teacher education including the cultivation of critical thinking and values in student teachers are less likely to

succeed without effective modelling by teacher educators. As pointed out by Korthagen, Loughran, and Russell (2006), “so long as teacher educators advocate innovative practices that they do not model, illustrate, and read as text in their own teacher education classrooms, teacher education reform will continue to elude us” (p. 1036).

Among all the responsibilities, changes, and reforms in teacher education, we need to examine whether teacher educators have the requisite values, knowledge and skills to meet the many demands of them (Kosnik et al., 2013). In Singapore, teacher education aspires to nurture professional values in student teachers (National Institute of Education, 2009). It is therefore important to study whether teacher educators today are in a position to foster the growth of professional values among student teachers and how they go ahead achieving these goals. If we accept the premise that teacher educators must possess the values they would like to see in their student teachers (see Sherman, 2013), then it is important to examine the values held by teacher educators. There has been some research examining how thinking and values are being cultivated (explicitly and implicitly) in student teachers (see Tan et al., 2017). These studies (e.g. Tan et al., 2017) mainly focus on the features and curriculum design within the teacher education programmes (e.g. service learning programmes), rather than on the actual practice of teacher educators. The paucity of research on teacher educators, is a gap that needs to be addressed (Kosnik et al., 2013). In addition, despite the seemingly obvious support for teacher education to develop student teachers’ thinking and values, teacher educators can face many difficulties in effectively doing so in their classrooms (see Korthagen et al., 2008). If teacher educators find it hard to achieve these goals and this may mean that student teachers fail to develop the thinking skills or professional values espoused in the teacher education programme. To date, empirical evidence is lacking about whether teacher educators in Singapore model the values that teacher education programmes have envisioned for their student teachers and whether the modelling is effective. This study attempts to find initial answers to these questions.

The Singapore Teacher Education Context

Singapore provides a good context to study the domain of critical thinking and values development in teacher education. It is explicitly stated as an underpinning philosophy of the Teacher Education Model for the 21st Century (TE21), proposed by the National Institute of Education (NIE), Singapore’s sole institute for pre-service teacher education. This values-driven teacher education model is underpinned by the V³SK framework, which spells out the values (V), skills (S), and knowledge (K) expected of a 21st century teacher. There are three value paradigms articulated in this framework, namely learner-centeredness values (e.g. commitment to nurturing the potential in each child), a strong sense of teacher identity (e.g. aiming for high standards, quest for learning), and service to the profession and community (e.g. social responsibility and engagement; for more details on the V³SK framework, please see NIE, 2009, & Tan et al., 2017).

The TE21 model recognises the importance of cultivating student teachers’ thinking (e.g. how to think and what to think about) and values (Tan et al., 2017). First of all, it is posited that teaching is “a professional thinking activity” (Liu et al., 2017). Therefore, teacher education needs to prepare teachers “who are autonomous and self-driven in improving their own practice, reflective of their own roles, and capable of drawing upon theories and research to inquire and innovate their teaching to support their students learning” (Liu et al., 2017, p. 175). In addition, teachers’ knowledge and skills must be firmly grounded on values (Liu et al., 2017; Sherman, 2013). For example, they need to develop a strong passion for learning, learn to be inquisitive and creative, and nurture a strong sense of responsibility for the community and the environment (Tan et al., 2012).

Methodology

This study adopted a qualitative case study approach, which “opens the way to gaining entirely unexpected ideas and information from participants in addition to discovering their opinions on simple pre-set matters” (Kosnik et al., 2013, p. 528). This section describes the research participants and the data collected, the course that the teacher educator taught, and the method for data analysis. The research team invited teacher educators to participate in a research project that aimed at characterising the pedagogical practices of teacher education in NIE. Invitations were sent to different academic groups in NIE to seek their recommendations of teacher educators who have good records of pedagogical practices. Only the English Language and Literature Academic Group replied and recommended Dr. A. She agreed to participate in the study. The team interviewed her after she completed teaching all 11 lessons and invited the course participants to participate in our focus group interviews on a voluntary basis.

The Teacher Educator and Her Course

Dr. A is a senior lecturer at NIE. She teaches teaching methodology courses to both student teachers and in-service teachers. In addition, she has designed teaching packages for overseas teacher educators. Before becoming a teacher educator, she was a school teacher in Singapore for many years. She won the institute’s Excellence in Teaching Award, which recognises teacher educators who “display excellent teaching practices and enrich the learning experiences of their students. They inspire students through their passion for teaching and their care for their students’ learning” (NIE, December, 2009).

Her course aims at equipping student teachers with pedagogies for teaching, monitoring and assessing reading and writing at Upper Primary Level. Student teachers are supposed to learn the relevant language teaching strategies, and design appropriate lesson plans. Additionally, they are expected to understand the underpinning principles governing these strategies. Besides these knowledge and skills, Dr. A considers the development of professional values as an important aim of her course. She aspires to nurture student teachers into thinking professionals who are able to think critically, and strive to make a difference in teaching and learning. Evidently, the course objectives reflect the V³SK framework, underpinning the teacher education programmes in NIE earlier described in this paper.

Data and Data Analysis

Data for this study comes from two main sources: 1) a face-to-face interview with the teacher educator (Dr. A), 2) four focus group (FG) interviews with the course participants (3 per group, 48% of 25 student teachers). Student teachers are from the Diploma in Education (General) programme in NIE. The larger study that this paper is based also included video recordings ($n = 11$) of this particular class taught by Dr. A over a semester. Given the focus of this paper, only the interview with the lecturer and the focus-group interviews are used for the analysis. Ethics clearance from the University’s institutional review board (IRB) and the Ministry of Education Singapore were obtained before data collection began.

The interviews were “dialogue-based” (Sandberg & Pinnington, 2009) in that interviewers constantly invited participants to elaborate on their points by providing examples and explanations. The protocols were made up by a few open-ended questions that focus on some major areas, for example, the purpose and objectives of the course, the teacher educator’s role and the student teachers’ role in the course, how this course fits into the overall Diploma programme, how this course has contributed to student teachers’ professional development, etc. The follow-up questions are contingent on the participants’ responses. The constant use of follow-up questions to probe for further details enhances the validity of the interview data.

The interviews were transcribed by part-time researchers, and checked by two research assistants. Data analysis was conducted using the software named NVivo. The framework of

teacher modelling and NIE's (2009) three prolonged value paradigms were used to guide the data analysis. Specific techniques adopted for data analysis were the constant comparative method and Glaser's (1978, cited in Urquhart, 2013) recommended open coding (identifying categories), selective coding (clustering around categories), and theoretical coding (connecting categories) techniques. First, two researchers individually coded the transcripts, then discussed to reach agreement on the codes and grouped similar codes (e.g. passion, strive for excellence) into higher level categories (i.e. values). Then the two researchers worked together to identify relationships between categories. For example, they considered the importance of role modelling in cultivating thinking skills in students.

Findings and Discussion

The findings are presented according to two major themes which emerged: 1) cultivating critical thinking, and 2) cultivating values.

Cultivating Critical Thinking

We asked Dr. A what she thought was particularly valuable to student teachers' development that will help them in their future roles as teachers. She stressed the importance of developing them into teachers who can think critically.

I think critical thinking. I exposed my class to many kinds of strategies. For example, using Art to teach English. For many students, it was the first time they were exposed to it. And I told them by using paintings of different painters, the students can actually learn to be critical. They build their critical skills and then at the same time you are promoting speaking, listening, reading and even writing.

However, when student teachers were asked about their perceptions of the goals of the course at the beginning of the interview, their responses seemed to focus more on technical and practical aspects such as "ways to teach different text types", "more ideas to teach reading and writing", "prepares us in integrating ICT in teaching", "different resources that opens up our eyes", and the use of "authentic materials", as well as the aims and impact of the curriculum and teaching methods on the students. It appears that none of the student teachers perceived critical thinking as one of the major learning gains from the course. However, as our interviews go deeper, evidence shows that critical thinking was in fact integrated into the various activities and learning tasks in the course.

Student teachers' responses demonstrated that the cultivation of critical thinking was rather evident in the course. A main strategy that the teacher educator adopted was modelling the thinking strategies:

She acts out her strategies and she thinks aloud at the same time to show us if this strategy is going to be effective or not. The best part is her acting it out. It allows us to analyse. This is good for us because we are going to apply that when we are teachers. So it allows us to be more critical when we plan our lessons in the future. (FG4, T3)

There are two elements that she carried out herself very well. First, she makes us think critically on our own ideas and on her strategies. For a certain strategy she will ask us how we are going to do it. She listens to our ideas and after that she will critique constructively so that it puts us on the right track. (FG4, T2)

The following example shows how the teacher educator sets an example for the student teachers' to think "out of the box" pedagogically in terms of making use of things from daily life. More importantly, this and other similar activities make student teachers understand deeper the purposes and methods of language learning. Student teachers realise that for Dr. A, "everything is a resource for teaching and learning". Her pedagogical

reasoning is an “eye opener” and makes student teachers “suddenly see everything in a different view”.

She found some random pictures, even normal black and white pictures, which you might just consider as rubbish. But she used it in class and made us form into groups and come up with stories. We wouldn't have thought of that. We see that anything can be a point of communication. Because for language learning, the whole point is using it. So she shows us through these little things.

Student teachers “find it exciting” when Dr. A is modelling the strategies with them and they are confident that their future students will be similarly interested, if not more, when they apply the teaching methods that is taught in the course. In addition, going through these mini demonstrations enable student teachers to “foresee certain problems that you might face when you are teaching in the class”. They were asked to constantly reflect on the contents being learned and ask questions like “how”, “why”, and “what if”. They were excited and determined to “go back to school to try these strategies”. Student teachers mentioned that for some of the teacher education classes they attended, everything they learned “disappears”, whereas in this course they can remember what they learned because of the modelling by the teacher educator. The responses above show that the teaching strategies are made into opportunities to nurture capacities of prospective teachers to be ‘responsive’ (Sherman, 2013) to their future students. In other words, student teachers are asked to constantly relate the strategies they learn in their teacher education programmes to their future roles as teachers. They are pushed to think critically and to constantly have their future students’ interests in mind.

Critical thinking is not only encouraged in the classroom activities, but also in the course assignments. To all interviewees, the assignment requiring them to infuse ICT in their lessons is the most challenging as they need to justify their choices. However, they see it in a positive light in terms of how it stretches their critical thinking and creativity. Moreover, all assignments will be returned to them with constructive comments for improvement.

The assignment got us think through the lesson plan, including various activities such as pre- and post-activity. Fitting the activities into a 1-hour lesson is another issue that requires careful thinking, as time is a major factor. (FG3, T3)

The last assignment regarding ICT was not easy – we had to think why we want to use ICT. We have to figure out what kind of lessons and topics we want to use along with ICT. (FG4, T2)

We will be asking questions like “Are you sure it's feasible? Do you think you can?” It makes us think whether it is going to be realistic or not. (FG4, T3)

The quotes reveal that topics in the course (e.g. ICT) were used to trigger or facilitate critical thinking. Finding answers to these critical questions or issues require student teachers to search for new or additional knowledge, which in turn brings about new understandings.

Student teachers’ awareness of the need to think critically is obviously shown in their responses. It is also clear that they are trying to form a habit of questioning and asking “why”. This is possibly because of their teacher’s belief in the importance of critical thinking, and her persistence in stretching them to always think deeper. This links to our argument that a teacher’ professional values is important for the cultivation of thinking in his/her students, as supported by Blakey’s (2015) research with medical students. The two quotes below further show the teacher educator’s persistence in probing her students.

She’s like the other voice inside our mind or inside our head telling us “why not”? (FG4, T2)

She's like a devil's advocate. "Are you sure? Are you sure this is correct?" It makes us think twice about what we want to do. (FG4, T3)

This section shows that the teacher educator not only believes in the importance of critical thinking, but also has successfully cultivated it into a habit in her student teachers. To her students, she is someone who walks the talk as a role model in questioning and critiquing pedagogical thinking and practice. Persistence in asking student teachers to think deeper and think critically constitutes a moral endeavour on the part of the teacher educator (Sherman, 2013). Her becoming "the other voice" and "a devil's advocate" suggests her intellectual attentiveness, patience, and readiness in nurturing students' thinking. These virtues may have originated from the aim she has for her course and for her students – enabling them to make a difference in their future roles as teachers.

Despite the positive evidence shown above on the cultivation of critical thinking, student teachers' responses also revealed that their criticality seemed to be confined to thinking about the ideas and strategies taught in the course. On the contrary, they remained uncritical in terms of what is being taught or told by the teacher educator. Many of the times, they used expressions like "she said..." "she told us you can't ...", "our role is to absorb as much as we can from the course". There may be three possible explanations. First, student teachers' admiration for the teacher educator's expertise and virtues might have influenced them to be overly receptive to what is told by her. Second, the development of student teachers' critical thinking is still in a primary stage, such that they are unable to offer critical opinions towards what was taught by their teacher. Lastly, the student teachers could be only sharing things which are socially desirable in the focus group interviews. They might become more critical in individualised interviews.

Cultivating Values

When asked about the factors that made their teacher educator's course successful, student teachers unanimously attributed it to her personal attributes and professional values (e.g. passion, strive to make a difference). This finding is consistent with earlier studies that the positive attributes and interpersonal skills of teacher educators were the most influential factors that can help develop teacher excellence (Kosnik et al., 2013).

Making a difference

When asked about how she sees her role as a teacher educator in this course, she said that it was to make a change in the education system, and to encourage the students not to be afraid to make changes and to speak out.

I hope that they will not stick to the textbook. For example, they will know that there are many other ways to assess students other than just worksheets. And they will be empowered to come out with as many creative ideas as possible. I want them to make a difference.

From what we learned from the interviewees, the mind-set of making a difference was reinforced in the course.

She tells us that when we go into school as beginning teachers, a lot of us will just conform to what the old teachers do. For example in school, they do STELLAR¹, so we will just follow STELLAR and we may not practice what we learn in NIE. So she always encourages us to be brave to try out things. (FG3, T3)

¹ STELLAR stands for STrategies for English Language Learning And Reading. It is an official English programme for primary school students in Singapore.

The quote from the student teacher below justifies why teacher educators need to role model the values they want to instil in their student teachers.

It's your duty to make a difference in our lives. So it starts from you (the teacher educator) teaching us, and in turn we teach the kids. So if you're not doing it well, if you're not showing examples, if you're not carrying out your lessons in the most effective way then I don't see how we can do it in schools. (FG4, T2)

This quote is a powerful testament of the fact that the cultivation of values in teacher education classrooms may lie primarily in the specific enactments of these values – “make a difference in our lives”, “showing examples”, and “carrying out your lessons in the most effective way”.

A passionate, confident and competent teacher

The teacher educator's passion, confidence, and expertise in being a teacher educator are particularly motivating to her student teachers' learning in the course.

[As teachers], we have to love what we are doing. I think she loves teaching very much and she imparts the love in us. We are able to see her genuineness. If we wish to be like her, we should have that same kind of passion. (FG2, T2)

She is so passionate about teaching and learning and it was almost addictive ... When the lesson goes deeper, sometimes we don't understand. She doesn't mind spending extra time to explain further to see in a different perspective. We can really see the genuineness coming out from her lessons. (FG3, T2)

To the student teachers, their teacher treasures and makes use of every minute that she is with the class in terms of her preparation, organisation, and delivery of the lessons. She moves smoothly from one activity to the next. She is “lively”, “animated”, “fun”, and “inspires thinking”, and “laughs with us”. As a result, the student teachers “have no time to day dream” and are always “active” and “engaged”. Moreover, they felt as close as if they were “in some bond with her”. By contrast, for the lessons by some other teacher educators, they “can't wait for it to end”, while for Dr. A's lessons, “you were not expecting the end, you were just engaged in the lesson all the way”. The student teachers attributed their deep engagement in the lessons to her way of delivering and conducting the lessons including authentic examples and materials, modelling and hands-on activities, her honesty and openness in expressing opinions, as well as her sound knowledge in the domain based on rich classroom and research experiences. They aspire to be as effective as her when they are teaching in schools. The student teacher below shares a snip of how she organises and delivers the lessons.

She writes the agenda on the board before we enter the class. I love that, because when you enter the class, you actually know the objectives of the lesson. She always ticks off one item whenever we have completed one objective. It's very systematic. She puts out all resources before the lessons, she knows clearly which one to take first, and which comes next. She never wastes any time looking for materials. So the entire time, she is with us and teaching us. This is very important. (FG1, T2)

One of the biggest learning points from the course for this particular student teacher is the teacher educator's organisation. The student teacher felt that she was personally not well-organised. She realised how much it would help her teaching if she had everything prepared and in a clear order. Organisation is personally meaningful and important to her because she used to be disorganised and looking for things, which was a waste of the students' precious time, as she had realised.

Consequently, the teacher educator's role modelling as a confident, passionate, and competent teacher helped build in her students the confidence to teach. All interviewees felt

more prepared to be a competent English language teacher after attending this course. Their confidence not only comes from practical teaching strategies they have learned, but also their enhanced ability to “gauge students’ different learning styles”, “interests”, and “achievement levels”.

There are two qualities that I really admire – her confidence and her humility. When she teaches us, it radiates very strongly. She really knows her work very well and she prepares her lessons very well. But it’s not the mere going through of things. It is how she engages you in the lesson and her confidence in what she teaches and what she thinks. Her confidence radiates to us and we also feel confident in what we learn. I hope that we can carry this quality and model her confidence when we go out to teach. (FG4, T2)

Through this course, I learn how to use different strategies for reading and writing, like reciprocal teaching, thinking aloud. I also learned that ICT doesn’t have to be merely PowerPoint slides. There are so many things available online which are exciting and interesting resources. I think it really gives us a wider perspective of how we can teach reading and writing in a more creative way. (FG1, T3)

Student teachers not only feel they have become more confident and “more adventurous” in teaching, they are also mentally prepared to justify the risks they would take in teaching with appropriate pedagogical reasoning.

Of course with permission from your authority. So I feel that I don’t have to worry about doing whatever my supervisor tells me to do as long as I have justified my choices. For example, I can tell her why my method may be more useful than certain conventional methods. (FG2, T1)

To strive for excellence

To the student teachers, their teacher is friendly, humble, and humorous, but at the same time very strict with them. For example, she is strict with how they are dressed, how they present themselves as student teachers, do assignments, etc. She closes the door to the classroom at exactly the scheduled time to start the lesson and would not wait for those who are late. These educative experiences prompt the student teachers to not only become better professionals in terms of ethics, but also better persons (e.g., being punctuate). The abundance and richness of learning materials that she brought to her class inspired student teachers’ passion for learning and knowledge. When they see her spending so much effort sourcing materials for them, their motivation to learn is enhanced: “we find ourselves going to the bookstore more often as well”, “it seems like her love for books rubs off”, and “we actually get the love of finding materials”. They now have a better understanding of the importance of continuous learning for a teacher and the necessity to “keep getting updated even after graduation”. A student teacher shares how she strives to be a critical thinker and tries to do better in the assignments.

When we were doing assignment 2, I felt that I need to do something better than assignment 1. So it kind of pressurised me to do better, but it is in a positive way. It makes me be a critical thinker to see whether this is going to be good or not. (FG4, T3)

A culture of sharing

The teacher educator has a strong sharing attitude. She shared generously with the class various materials and resources for teaching and learning. Her attitude influences her student teachers in a rather positive manner. Student teachers appreciate the fact that their classmates are “helpful and sharing”. One of them created a Dropbox folder for all to store their learning journals, lesson plans, their comments on the appropriateness and usefulness of learning materials (e.g., websites). It becomes a rich resource for each of them in the future. They said that “it’s important for us to share everything”.

Future-orientation

The student teachers appreciated the teacher educator's effort in always trying to establish connections to their future roles as teachers. These connections, reflected both in the course tutorials and assignments, also bridge pedagogical theory and practice.

She teaches theory and then she relates it to a real life class experience. So we act as students, and the way she conducts the entire activity really fits into how we would do it in a local classroom context. This helps us to apply it in the future. She really helps bridge the gap. (FG3, T1)

I find this module to be one of the most practical ones. I can visualise how I am going to implement all our assignments from this course into practice. In addition, I can tailor it according to the number of pupils and their abilities. So it's really practical. In some other modules, the assignments are not practical at all. Even though they are lesson plans, we just can't see how to tailor it to the real context. So I think this course really contribute much to our learning. (FG4, T2)

The above evidence demonstrates the impact of the hidden curriculum in the teacher educator's classroom on values education. It highlights that the values that students are constantly learning may not be those that are explicitly taught (Halstead & Xiao, 2010). For example, student teachers are encouraged to follow their own judgements of how best to teach students rather than strictly follow the official syllabus. They are encouraged to make a difference in their future students because their teacher educator has made a difference in them. They aspire to be teachers who are passionate, confident, competent, and always strive for excellence. While service learning components may be important in values education, our evidence demonstrates the generative power of a teacher educator who lives out positive professional values in her classroom practice.

Student teachers' sharing suggests that the teacher educator did not impose her ideas to them in a forceful manner, which would limit their autonomy and development towards higher levels of knowledge. On the contrary, student teachers were encouraged to take ownership of their learning and consider various alternatives.

More importantly, it is the teacher educator who provides the context of effective pedagogy and established positive and values-rich relationships with her student teachers, which lead to their greater motivations in learning. In other words, the pedagogical actions of the teacher educator as well as the values these actions display ensure the establishment of values-rich relationships with her students, which in turn have a positive impact on the effectiveness of the learning environment in her classroom. This concurs with Lovat et al.'s (2011) argument that a teacher whose pedagogy models the virtues and values advocated by educational institutions can transform the learning environment to one that is conducive for learning. Unfortunately, evidence in the current study is insufficient to demonstrate the details of how the teacher educator established such an environment. Further research using video-recordings of teacher educators' lesson delivery can better answer this question.

Discussion

Positive experiences during pre-service teacher education can be central to student teachers' lifelong development as a professional and as a person. Most would agree that what is taught by the teacher might be forgotten, however, cultivating a habit of thinking and the expected values of a professional teacher can both outlast the limited period of teacher education and be applied to various different areas of a teacher's life (Blakey, 2015; Winch, 2006). In general, this case study shows that student teachers were able to develop into thinking teachers and values were taught through participating in this course. Student teachers reported that they had learned to be creative and reflective in their teaching in terms

of the use of various teaching strategies. They were better equipped with strategies to engage learners and to integrate ICT in teaching. They became aware of the fact that the learner's intrinsic motivation is essential for long-term learning outcomes. In addition, student teachers reported that they had become more critical in their pedagogical thinking and had been exposed to strategies that helped them to cater to different students' learning needs.

Second, the teacher educator's own professional expertise and values appeared to be a particularly influential factor in shaping student teachers' thinking and values. They were inspired by the teacher educator's passion in teaching and striving to make a difference in education. Like the teacher mentioned in Kim and Schallert (2011), she carried the power of transferring her passion and confidence to her student teachers. They aspired to develop in themselves these values, and became more passionate and confident in carrying out their roles as teachers in schools. They developed a desire to learn and to improve. They were no longer satisfied with being uncritical followers of the given curriculum and wished to become thinking teachers who are able to make a difference in their students' lives.

An important contributor to Dr. A's success in her teaching practice and in influencing the development of student teachers' thinking and values was her 'authentic' role modelling. She modelled how to apply teaching strategies in classrooms and the necessity to engage students with hands-on activities. Through her modelling, theory and practice were bridged in student teachers' learning experiences in the sense that they were not only exposed to the theoretical underpinnings of certain pedagogical practices, but also asked to carry out these practices on their own so as to consolidate their understandings and mastery of these skills. Her example illustrates the importance of genuine role modelling for effective teaching and successful learning in student teachers. She is really a living example of the values that she wishes her students to have. In addition, her prior local school teaching experiences helped her relate the course content to the realities of the classroom in school settings. This connection enabled student teachers to relate their learning to their future roles as teachers.

It is worthy to note that cultivation of student teacher's thinking can be influenced by a teacher educator's embodied values, which is often overlooked or understated (Blakey, 2015). As critiqued by Palmer (2007), the influence of who teachers are (as represented by their values) is seldom considered as a key factor of effective teaching:

The question we most commonly ask [in teaching] is the 'what' question – what subjects shall we teach? When the conversation gets a bit deeper, we ask the 'how' question – what methods and techniques are required to teach well? Occasionally, when it goes deeper still, we ask the 'why' question – for what purpose and to what ends do we teach? But seldom, if ever, do we ask the 'who' question- who is the self that teaches? How does the quality of my selfhood form- or deform- the way I relate to my students, my subject, my colleagues, my world? (p. 4)

In addition, student teachers' sharing suggests that the teacher educator's pedagogy was more likely to develop, rather than constraint student teachers' professional autonomy. The critical thinking skills seems to have a generative power in terms of helping them meet future demands in teaching. For example, they have formed a habit of thinking carefully and thoroughly about pedagogical alternatives and strategies. They are encouraged to become brave and passionate professionals. These qualities have a potential to enable them to "develop the self-control and procedure independence required for acting upon their professional deliberations and decide among options without being unduly influenced by other's opinions" (Boote, 2001, p 73).

To conclude, our research showed how teacher educators' values could positively influence student teachers' learning and thinking. This echoes Palmer's argument that "who

the teacher is” can yield significant influence on student learning. Student teachers in our study regard Dr. A as their hero and as the model that they want to become. Dr. A ignited their passion to be reflective and creative in their daily engagement in the classroom activities, assignments, and future teaching practices. She has sown the seed in her student teachers such that they want to make a difference in the lives of their future students. This can be attributed to the teacher educator’s modelling- not only to model the pedagogies that she wants her student teachers to learn, but also be a living example of the professional values that teacher educators and teacher education programmes aspire to cultivate in their student teachers.

Despite the positive impact of the teacher educator that this article has shown, a few cautions need to be mentioned here. First, evidence from our research and elsewhere (e.g. Lovat et al., 2011) suggests that not all teacher educators have embraced values pedagogy. This research is a very small case study: one teacher educator and a few student teachers. Therefore, what applies to this teacher educator may not be generalisable. For example, the interviewees mentioned another teacher educator who taught them the same course (part I) in the earlier semester. That teacher educator adopted a very teacher-centred approach in teaching, which was characterised by impassionate direct instruction of theories (e.g., the teacher educator just read the slides or textbooks), no modeling of the pedagogical strategies promoted and minimum hands-on activities, low morals of learning, and unproductive group discussions where student teachers were left alone to explore their topics. Student teachers described the lessons as “unengaging”, “uninspiring”, and “painful”. Second, it is important to concede that what student teachers gained from Dr. A’s class was essentially an intellectual and theoretical exercise, with no guarantee of real classroom applications. Third, the research team asked the interviewees about the improvement that they would like to see in Dr. A’s classroom. We received no comments from them. This might be indicative of the primary stage of their critical thinking. Finally, we need to acknowledge that pre-service teacher education is only the initial stage of an ongoing process of professional development (Dyson, 2010). In other words, the seeds planted in teacher education needs to be continually nurtured and developed.

Implications and Conclusions

The world in the 21st century is rapidly changing, challenging, and highly unpredictable. Therefore, it is becoming increasingly difficult for teachers to prepare students to meet these challenges and to flourish in the new millennium (Tan, Liu, & Low, 2017). Numerous reform efforts have been put into teacher education to prepare a high quality teaching force, which is often considered as “the most influential and pivotal factor of educational success” (Tan et al., 2017, p. 3). One constant amid the change is that teacher educators should be responsive to student teachers to nurture their capacities for them to be responsive to the needs of their future students (Sherman, 2013). Using interview data with a teacher educator in Singapore and 12 student teachers in one of her classes, this paper has demonstrated how teacher education should and can be an inspirational practice in terms of cultivating student teachers’ professional values and prepare them to be thinking professionals. The professional qualities and pedagogical practices of teacher educators embody the values-driven paradigm underpinning teacher education in Singapore (Tan, et al., 2017). Student teachers’ responses clearly demonstrated that they have not only acquired knowledge and skills in the subject that was taught by the teacher educator, but also developed reflective dispositions and professional values (e.g., making a difference, striving for excellence).

We are cognizant that it is hard to summarise what a teacher educator and his/her pedagogy would look like in different contexts. However, as stressed by Chinnery (2010), a good starting point would be for teacher educators to re-envision their roles in teacher education

beyond that of merely providing pedagogical and content knowledge. Dr. A is a teacher educator who truly bridges theory and practice. She brings the rhetoric of teacher education reform to reality through her practice. It is hoped that this study can help inform research and practice that “seeks critical self-awareness, understanding, and the capacity for all educators to think, plan, and act in ways that are pedagogically effective and morally responsible” (Sanger & Osguthorpe, 2011, p. 8).

The affective qualities of being a teacher educator (e.g. caring, passionate, empathetic, professional, ethical) are highly valued (Kosnik et al., 2013). One major implication of the above findings is that to cultivate values among student teachers, it is important for teacher educators to become living examples of a values-driven teacher education paradigm. If student teachers are to be taught values, these values ought to be visibly exemplified and embodied by teacher educators. Another implication is that teacher education pedagogy needs to help student teachers examine their own and others’ values. In addition, it is important for teacher educators, especially when they are teaching methodology courses, to be able to model the pedagogical practices they would like their student teachers to have.

It is important to note that this paper takes a case study approach and focuses on only one teacher educator and the findings may not be generalised across the entire community of teacher educators. Future research may take a few directions. First, it is important to increase the sample size to see if the findings and conclusions of this study is true for other teacher educators and student teachers. Second, it is necessary to conduct similar types of research on other types of teacher education courses (e.g. content courses). Third, researchers may conduct similar studies in other contexts to compare potential cultural differences and commonalities.

To conclude, the key message that this study hopes to convey is that teacher education and teacher educators should be the starting point of educational reforms (Shirley, 2017). The value-activeness of teacher education lies largely in teacher educators’ role-modelling of the professional values that they want to cultivate in student teachers. Learning how to think and care starts with each student teacher (Sherman, 2013). To have the capacity to make a difference in the students that they are going to teach, student teachers need teacher educators who can make a difference in their teacher education journeys.

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