
Title	Enhancing the theory-practice nexus in pre-service practicum: The Singapore way
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ENHANCING THE THEORY-PRACTICE NEXUS IN PRE-SERVICE PRACTICUM: THE SINGAPORE WAY

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Abstract

Teacher education institutions or universities all over the world struggle to help their student teachers narrow the gap between the theories they have learnt and the translation of those theories into actions in the classroom. This chapter will show how the National Institute of Education (NIE), Singapore addresses this issue through her practicum programme. The latter has been enhanced to include the use of e-Portfolios, reflective practice and teacher inquiry. NIE also strengthens her relationship with the schools by getting the school mentors involved in conducting focused conversations with their student teachers during practicum. This chapter will also present the implications of the initiatives carried out by NIE for ASEAN and countries beyond.

Keywords: theory-practice nexus; practicum; e-Portfolio; reflective practice; teacher inquiry; enhanced school partnership

Introduction

Teacher educators in institutions or universities are often accused of being too theoretical, so much so that their student teachers cannot apply what they have learnt from these educators into the real world—their classrooms. This gap between the skills and knowledge taught in pre-service programmes and the actual situation in the classrooms is confirmed by studies conducted over the years (Cochran-Smith, 2005; Korthagen, 2010; Roness, 2011, cited in Allen & Wright, 2014). The National Institute of Education (NIE), the only institution which accredits teachers in Singapore, is not exempted from this issue.

NIE's teacher education is university-based, as she is part of the Nanyang Technological University, but she continues to strengthen her collaboration with the Ministry of Education and the schools in order to assist her student teachers "make effective transitions from campus learning to classroom teaching" (NIE, 2009, p. 40). Good teacher education programmes have "extensive and intensely supervised clinical work integrated with course work using pedagogies that link theory and practice" (Darling-Hammond, 2006a, p. 300). NIE aims to continue to have a good teacher education programme so she addresses this issue of theory-practice disparity through the practicum programme. Even researchers like Allen and Wright (2014) affirm that practicum is "one of the time-honoured

approaches to mitigate against the theory-practice ‘gap’ in teacher education” (p. 137). The practicum is an integral part of NIE’s initial teacher preparation programme. It is through practicum that student teachers have the opportunities to put in context the theories they have learnt and translate that into action in the classrooms. The programme has been enhanced to include the use of e-Portfolios, reflective practice and professional inquiry. NIE acknowledges that the practicum programme cannot succeed without having a strong partnership with the school mentors. For that reason NIE engages the school mentors to conduct focused conversations with the student teachers under their charge, and faculty members conduct workshops to equip these mentors in facilitating these conversations. This partnership with the schools will further tighten the theory-practice connection.

The e-Portfolio

One of the ways NIE addresses the issue of theory-practice gap is by introducing the use of e-portfolios. All pre-service students at NIE have to set up an e-Portfolio each. The e-Portfolio is “an electronic collection of authentic and diverse evidence of a student teacher’s learning and achievement over time, on which he/she has reflected and designed for personal development as well as for presentation to audiences for specific purposes” (NIE, 2012, p. 11). Portfolios have been used worldwide in teacher education institutions or universities as a way of monitoring and assessing pre-service and in-service teachers. In the process of developing their portfolios, teachers “meaningfully select artefacts that illustrate their learning and how closely it is translated into actual teaching” (Koh & Liu, 2015, p. 6). This in turn helps them “to take charge of their own learning and professional development, identify and analyse principles and content and develop dispositions that will be needed to accurately and convincingly document their competency as teachers” (Stolle, Goerss, & Watkins, 2005 in Koh & Liu, 2015, p. 6). Because of the availability of free cloud-based open-source platforms, NIE chooses to use the electronic form of portfolio instead of the hard-copy one. Moreover, e-Portfolios reach out to a wider audience than the non-electronic ones.

As part of their NIE coursework, student teachers have to attend a course entitled ‘Professional Practice and Inquiry’. This course is meant to show them the purpose and use of portfolio; what teaching philosophy is about; how to inquire into teaching; how to embark on reflective practice; how to share the e-Portfolio during their practicum, and other topics. The student teachers will learn that the e-Portfolio “serves as a cognitive framework” which gives them the opportunities to “form connections between the various modules undertaken at NIE” (OTE, 2016, p. 37). By doing that they should be able to “synthesise and aggregate their learning, and strengthen the theory-practice connection” (OTE, 2016, p. 37).

In one of the weekly lectures on “Teaching Philosophy”, they are taught how to write their teaching philosophy and they are to write their statements and put them in their e-Portfolios. In order to write their philosophies, they have

to draw on what they have learnt in their various courses, like Education Studies and Curriculum Studies courses, about the theories of teaching and learning and the methodologies of teaching specific subjects. The student teachers may see their philosophies change with time, especially after their practicum stint in schools, and they are encouraged to revise their philosophies and re-load them onto their e-Portfolios.

The use of e-Portfolio is not confined to the 'Professional Practice and Inquiry' course; it is subsumed into NIE's curriculum. Tutors of other courses are encouraged to assign tasks for their student teachers to do and to instruct them to put them up onto their e-Portfolios. Hence, student teachers document what they have learnt at NIE by uploading their artefacts, such as coursework; photographs of the activities done in their classes; teaching resources and project work. During practicum they can refer to the artefacts in their e-Portfolios to remind them of the knowledge they have acquired and can use in their classrooms, for instance, some strategies for classroom management. They can also utilise the teaching resources they have deposited in their e-Portfolios. This was exactly what one student teacher did in 2012. Some of the ideas she carried out in her lessons during practicum were "extracted from what I [she] had recorded in my [her] e-Portfolio, which makes me [her] glad that I [she] had a platform to store all these ideas in the first place!" (Chan, 2015, p. 79). This shows that what are taught at NIE can truly be translated into student teachers' practices.

The e-Portfolio also provides an avenue for student teachers to submit their reflections on educational issues. They have the choice of inviting their course mates and tutors to view their reflections and to comment on them. By doing that they can learn from the feedback and refine their thinking processes. In some courses, the tutors assign discussion topics for their student teachers to work on and they are to post their views or essays in their e-Portfolios. They are to grant their fellow course mates and tutors access to their posts so that group or class discussions can take place online. The task can then be assessed by the tutors, but the whole e-Portfolio is not to be assessed by anyone. These reflections, be they self-directed or not, and discussions promote critical thinking into theories and ways these theories can be applied in the classroom.

How the e-Portfolio further enhances theory-practice link and is used for practicum are discussed below.

Focused Conversations

All student teachers have to go through a 10-week practicum in their final year of studies at NIE. During that practicum they have to participate in three Focused Conversations (FCs) with the School Coordinating Mentor (SCM) of their practicum school and their fellow student teachers in that school. The SCM is a senior teacher who facilitates the practicum of student teachers attached to his/her school and who mentors them too. FC1 centres on student teachers' portfolio sharing on 'My Learning in NIE'; FC2 focuses on the

discussion on 'Managing Teaching and Learning'; and FC3 is back to student teachers' portfolio sharing on 'My Learning in School'.

The SCMs have been trained by NIE on how to facilitate these Focused Conversations. Because of FCs, the SCMs are now not mere administrators and assessors of practicum but also mentors to the student teachers. They partner NIE in helping our student teachers make meaning of what they have learnt at NIE.

1. Focused Conversation 1

In the first Focused Conversation which is held during the first week of practicum, student teachers have to present their teaching philosophies to their SCMs. They have to also share what they have learnt at NIE that have influenced their conception of teaching and learning and highlight some of the things that they hope to try out during their practicum. They can present their teaching philosophies via their e-Portfolios, or extract resources from their e-Portfolios and put them into powerpoint slides. Similarly, when they share about how they intend to teach their specialised subjects, they can showcase the artefacts which they have deposited in their e-Portfolios. This first Focused Conversation (FC1) provides a good opportunity for them to articulate their learning and teaching plans. This is what a student teacher had to say about FC1:

The process of preparing for the presentation allowed me to reflect on why I chose to teach, and to track how my beliefs about teaching had changed. I was also able to reflect on the many things that were taught at NIE and to identify those that I felt were relevant for application during my practicum and subsequently in my teaching as a qualified teacher. (Loo, 2015, pp. 73-74)

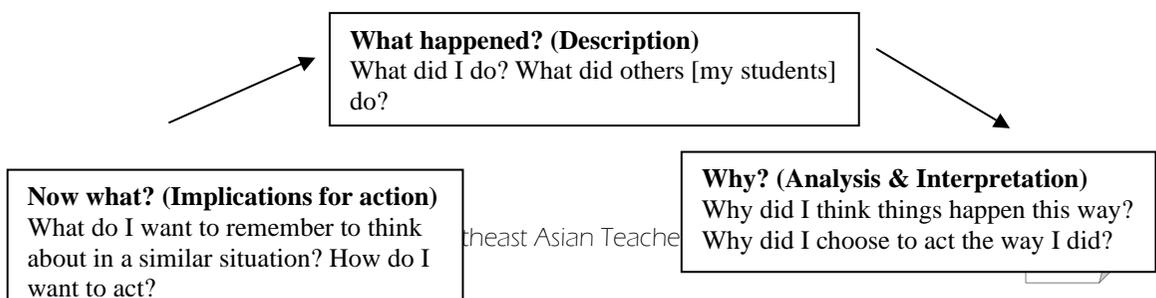
One SCM gave her opinion about FC1 via email, stating that it was interesting to note that despite the student teachers under her charge having gone through similar initial teacher training programme, each of them "took away a distinct learning experience and reflected on how it shaped his/her teaching philosophy".

2. Focused Conversation 2 and Reflective Practice

The Focused Conversation 2 (FC2) takes place mid-way through the practicum. Student teachers in the same school will meet with their SCM to share their reflections on one of these: an issue on classroom management which they have encountered in their lessons or with their students; or on motivation and instructional strategies which they have encountered or practised in their lessons. Before coming for FC2, the student teachers would have prepared what they want to share using the 4-Step Reflection Process that was taught to them (this 4-Step Reflection Process will be expounded in the next paragraph). The SCMs have gone through a workshop on how to facilitate FC2 using this Process. They are to guide the student teachers to "co-construct knowledge, discuss their prior beliefs, integrate their personal-professional knowledge, and develop their

personal stance towards teaching” (Png & Liu, 2017, p. 228). The SCMs are to refrain from prescribing ways to solve the problems raised because the student teachers are the ones who are supposed to propose solutions to their problems after they have reflected on them. After one student teacher has shared, the SCM is to encourage the rest of the student teachers in the group to give their input on what is being shared. In this way, the student teachers learn from one another too.

A number of advocates of reflective practice have designed different models for reflecting. It is useful to guide student teachers to reflect using a structure or a framework (Borton, 1970; Gibbs, 1988; York-Barr, Sommers, Ghere & Montie, 2006). NIE has adopted the 4-Step Reflection Process suggested by York Barr, Sommers, Ghere and Montie (2006) and has illustrated it in a cyclical form (see Figure 1). This 4-Step Reflection Process “brings the reflector through a sequenced process of thinking: description (what?), analysis and interpretation (why?), overall determination of meaning (so what?), and projections about future actions (now what?)” (York-Barr, Sommers, Ghere & Montie, 2006, p. 82). The student teachers actually do a reflection “on-action” (Schon, 1983), that is, they “reflect back on circumstances or events that have already occurred” (York-Barr, Sommers, Ghere & Montie, 2006, p. 85). In FC2 the NIE student teachers reflect back on the issues mentioned in the preceding paragraph. They also do a “reflection-for-action” (Butler, 1996) as they “envision the effect of specific interventions or actions on a group of students, the classroom as a whole” (York-Barr et al., p. 87). This is evident in the last stage of the 4-Step Reflection Process. This last step will prepare the student teachers “for a similar situation should it occur again in future” (OTE, 2016, p. 60). In this sense, the 4-Step Reflection Process is a cycle and “has a spiral effect—it leads the teacher to a higher level of action and reflection” (OTE, 2016, p. 60).



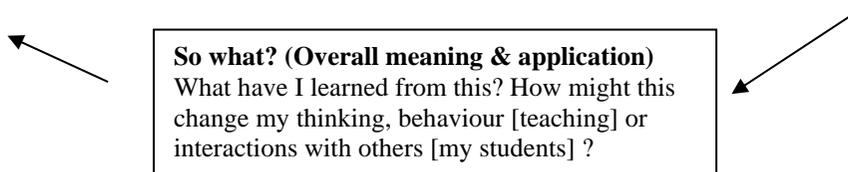


Figure 1. The 4-Step Reflective Process¹

¹ Adapted from York-Barr, Sommers, Ghore & Montie (2006)

The benefits of having NIE student teachers reflect and use a reflection framework is affirmed by a student teacher:

Reflection helps turn confusion to clarity, to think about the successes and which interactions need more work ... Tools such as Fig 1 [similar to Figure 1 in this chapter], shared with us when we were at NIE, help me to analyse my blunders and how I might repair the damage those times I'd floundered. (Koh, 2015, p. 92)

Crawley (2006) defines reflective practice as an “intuitive and implicit application of professional knowledge to specific teaching-and-learning settings” (p. 1). That was what the author of this chapter witnessed when she sat in at a few FC2s. The student teachers shared what they did in class, and though they did not mention where they got those ideas from, it was obvious that they were drawing from the pool of “professional knowledge” they had acquired. Kettle and Sellars (1996), in their study of third-year student teachers, found that “the use of reflective groups encouraged student teachers to challenge existing theories and their own preconceived views of teaching” (cited in Ferraro, 2001, p. 1). That was what the author of this chapter saw too in the FC2s. When the SCMs opened the discussions to the group after one particular student had shared, the others would counter-propose some strategies to solve the problem raised or contribute their opinions. One SCM found FC2 “a useful experience as student teachers share their experiences, offer their actions” and that the student teachers in the group “encouraged each other and offer their view points and what they had done in their own classes” (feedback posted via email). In one FC2, the SCM consolidated the sharing and discussions by asking the student teachers in her group how much of their practice on classroom management was informed by theory. One student teacher shared that he learned about different teaching and learning styles in NE, and that teachers had to cater to diverse learners. He would try to have differentiated worksheets for his class so that those who finished their work earlier would not be restless and resort to misconduct.

It can be summed up at this point that the use of reflective practice, together with the focused professional conversations between the SCMs and their groups of student teachers, have helped NIE fostered the theory-practice nexus in teacher education. FC3 will not be discussed in this chapter as it focuses on what student teachers learn during their practicum and how they see themselves grow in relation to the NIE's list of Graduand Teacher Competencies.

Professional Inquiry

To build on reflective practice and focused conversations, NIE introduces professional inquiry in the practicum programme. The professional inquiry is a vehicle to drive the practice-theory nexus, not so much the regular theory-practice nexus (this will be discussed further on).

It is vital that “teachers inquire into their own practices, to refine teaching pedagogies and inform instruction to their students’ understanding and learning” (Chua, 2015, p. 105). Professional inquiry, better known as teacher inquiry, is “defined as systematic, intentional study of one’s own professional practice” (Dana & Yendol-Hoppey, 2009, p. 6). In such an inquiry, the teachers, including student teachers, “seek out change by reflecting on their practice” (Dana & Yendol-Hoppey, 2009, p. 6). That is what NIE encourages her student teachers to do via the reflective practice model. However, NIE wants them to take a step further by “collecting data to gain insights into their wonderings”, “making changes in practice based on new understandings during inquiry and sharing findings with others” (Dana & Yendol-Hoppey, 2009, p. 6). This data collection and analysis are not supposed to be as comprehensive as those in normal research (Cochran-Smith & Lytle, 1999; Richardson, 1994). Dana & Yendol-Hoppey (2009) assert that teacher inquiry is intentional and that the teachers’ thinking becomes visible as they share with the teaching fraternity. In line with these, NIE intentionally incorporated question (1) for students to answer after their FC2, and questions (2) and (3) after FC3:

- (1) What data (observation, interview, test marks, etc.) will I collect to help me improve in my teaching practice?
- (2) How have I used my data (observation, interview, test marks, etc.) to inquire into my teaching practice?
- (3) How have I used inquiry to develop one or more Graduand Teacher Competencies?

The answers to these questions are to be submitted to their NIE supervisors via their e-Portfolios. Not only do the NIE supervisors get to read them, but others who are given access to the student teachers’ e-Portfolios will also have a chance to do so. This is the “sharing with others” aspect of teacher inquiry which is mentioned above.

Below is an extract of a student teacher’s response to question (2):

Based on the data from my APT [Assessment of Performance in Teaching] forms, lesson observation notes, consultations with my CTs [cooperating teachers], students’ test results, as well as after-class conversations with students over the past weeks, I

have gleaned a better understanding of the students' learning needs. For example, the results from the students' first few editing tests alerted me to their weaknesses in grammar and the significant variation in language standards between members of the class. Accordingly, in order to maintain students' engagement with the material, I adapted my grammar lessons to suit the students' learning styles better by targeting only key areas that the students were especially weak in (e.g. tenses, subject-verb agreement). In this way, I have endeavoured to ensure that no student is left behind. (Ow-Yeong, 2015—extracted from his e-Portfolio with permission)

The above is an example of how the practice-theory, not theory-practice, link is strengthened. Smyth (1993) explains how in the past, 'practice' referred to application of ideas "developed by someone else (who usually wore the label of theorist or policy maker)" (p. 1). With the reflective approach, an approach which Smyth thinks is more relevant in today's context, practitioners are "assisted to theorise their own accounts of practice, and how they might use that as a springboard for action" (p. 1). He added that educationists should ask "what do practitioners need to know, and what do they already know or understand that might help them gain those insights?" instead of "what is best for practitioners to do?" (p. 1). This was exactly what happened when the student teacher in the above example inquired into his teaching. He carried out his planned lesson and realised that it did not turn out that well—this is the practice component. He ended up learning or theorising that to meet his students' learning styles, he should target "only key areas that the students were especially weak in" during his grammar lesson. This perhaps exemplifies the practice-theory link which is a by-product of teacher or professional inquiry.

Enhanced Partnership with Schools

NIE sees the value of improving her partnership with the schools as this is one way to reinforce the theory-practice connection. NIE is "at the helm of formal teacher education within an academic setting, equipping and reinforcing teachers with the values, knowledge and skills that will enable them to successfully navigate the challenges of the twenty first century classroom" (NIE, 2009, p. 41). She sees the schools having to play "a bigger, more active role in practicum ... and bridge the gap between campus-based learning and 'real classroom settings'" (NIE, 2009, p. 41). As such, she works closely with the schools through practicum.

In the past, the school coordinating mentors saw themselves as administrators of practicum – assigning them to cooperating teachers (CTs), and compiling the final assessment report. The CTs simply supervised and assessed the student teachers assigned to them. These have since changed. NIE now involves both the SCMs and CTs in mentorship roles. They are now responsible for helping the student teachers "question their own assumptions, accept personal responsibility for their own continuous learning, reflect and think

critically about their profession and their practice, and inquire and make informed decisions about teaching and the learning needs of their students” (Tan & Liu, 2015, cited in Png & Liu, 2017, p. 223).

To help the SCMs and CTs understand their roles as mentors and to assist student teachers link what they learnt at NIE with classroom practices, NIE conducts workshops for them. At the SCM training, they were shared their roles, the NIE’s practicum structure and processes, and the necessary tools to conduct the focused conversations. In addition, they are given an opportunity during the workshop to roleplay—‘guiding’ the persons next to them using the 4-Step Reflection Process model. It is impressed on them that using mentoring language is vital when conversing with their mentees, hence, they were shared the verbal and non-verbal mentoring language. After this workshop, the SCMs are better equipped to facilitate the FCs and partner NIE in helping student teachers make the theory-practice link.

The CTs are just as important mentors as the SCMs. They also get to understand their roles as CTs. In Allen and Wright’s study, their student teachers reported “feeling stymied in their attempts to make links between campus and classroom work” when the university and school staff are not sure of their roles and responsibilities (2014, p. 148). Hence, it is vital for NIE to go through the CTs’ roles with them again though they may already be familiar with them. They, like the SCMs, are also introduced to the 4-Step Reflection Process model used by NIE student teachers, and the use of the mentoring language. When the CTs become better mentors they will be able to help their mentees bridge the “campus-based learning” and “real classroom settings” divide. Though mentors are not supposed to assess their mentees, it is unique in Singapore—CTs have to both mentor and assess their mentees. At the CT workshop, they watch video recordings of good teaching and discuss how to assess teaching using the ‘Assessment of Performance in Teaching’ form. This is one medium to moderate the assessment of student teachers during practicum.

It cannot be overemphasised that the school SCMs and CTs form big parts in NIE practicum jigsaw puzzle. Hence, it is prudent for NIE to develop a strong partnership with the schools.

Implications for ASEAN and Beyond

All Teacher Education bodies, be they in ASEAN or not, should try to help their student teachers make sense of the theories learnt and show them how to apply them in the classrooms. Not all the above ways of linking theory and practice done by NIE, Singapore, are applicable to countries in ASEAN or other regions in the world. However, some can be adapted or done at a smaller scale.

For ASEAN countries with weak internet connections, the use of e-Portfolios may not be practical but they can use the hard copies of portfolios instead. Student teachers can still file their written copies of teaching philosophies and hard copies of their artefacts in the portfolios, and showcase

them during their presentations to their mentors. These presentations are useful in helping student teachers articulate the theory-practice link.

Teaching student teachers how to reflect and inquire into their teaching can be incorporated in any teacher education programmes in ASEAN and beyond. The values of reflective practice and teaching inquiry have already been expounded earlier in this chapter. It is within the control of the Teacher Education Institutions or Universities to take up the challenge of trying them out with their student teachers.

NIE has taken steps to enhance her relationship with the mentors in the schools and that has resulted in the successful implementation of FCs in the pre-service practicum programme. It may be easier for NIE to do so because Singapore is a small country. For teacher educators in countries in ASEAN and other parts of the world, they can perhaps work with their partner schools or district or province. Allen and Wright (2014), like Darling-Hammond (2006b), believe that for “student experience of integrating theory and practice” to be enhanced, a robust school-university relationship is vital as that “provide[s] the most proven vehicle for establishing and maintaining environments in which pre-novitiates can develop essential professional knowledge and skills” (p. 149).

Other more manageable measures which ASEAN teacher educators may use to balance theory with practice that are not highlighted in the earlier part of this chapter are micro-teaching and assigning of coursework tasks during practicum. Teacher educators in their universities, be they in big cities or small towns, can incorporate micro-teaching in their lessons. Students have to integrate what have been taught to them, plan lessons and carry them out during their tutorials. Fellow course mates and tutors can provide feedback after that. The audience of these lessons may not be real school students but having some make-believe students are better than none.

Next, “embedding coursework assessment in practicum” (Allen & Wright, 2014, p. 149) is what Allen and Wright’s research-subjects strongly advocate. Including coursework assessment in practicum might perhaps help student teachers reflect on whether some prescribed theories or strategies taught in their universities work well or not when tried out in their classrooms.

Conclusion

Time and again, studies have shown that “clinical experiences” are “powerful—sometimes the single most powerful—component of teacher preparation. Whether that power enhances the quality of teacher preparation, however, may depend on the specific characteristics of the field experience” (Wilson, Floden, & Ferrini-Mundy, 2001, p. 17). To add on to that, Darling-Hammond (2006b) has listed some “common components of power teacher education” (p. 41). Among them are the use of teaching portfolios; “a set of tools to develop the skills and practices of systematic, purposeful inquiry and critical reflection” (p. 106), and “strong relationships, common knowledge, and shared beliefs” which link the “school and university-based faculty” (p. 41). NIE is aware of all the above and that is why she enhances her practicum programme to

include the above mentioned measures to address the issue of theory-practice gap in teacher education and to increase the power of her teacher education.

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