
Title	Re-conceptualising teacher preparation in the era of new educational initiatives in Singapore
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Source	<i>AARE Conference, Fremantle, Australia, 2-6 December 2001</i>

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Re-conceptualising Teacher Preparation in the Era of New Educational Initiatives in Singapore

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Paper presented at the annual conference of the Australian Association for Research in Education, Fremantle, Australia, 2-6 December 2001.

In recent years there has been a hurricane of reform initiatives in Singapore's schools. Under the overriding framework of Thinking Schools, Learning Nation and the Desired Outcomes of Education, the Ministry of Education has been implementing three major initiatives in the schools, namely, National Education (a form of citizenship education), the IT-masterplan, and introduction of critical thinking and creativity into the curriculum. These initiatives are underpinned by related innovations like the reduction in curriculum content, a greater emphasis on responding better to student abilities and aptitudes, the introduction of project work, changes in school-based assessment and in the examination system, as well as systematic changes like the introduction of cluster schools, and moves towards self-appraisal of schools.

Changes in the schools are occurring so rapidly that teacher education is scrambling to keep pace. As the sole teacher education institution in Singapore, the National Institute of Education (NIE), in response to school reform, has

embarked on a major organizational change and on curricular changes in all the initial teacher education programmes. A Steering Committee, chaired by the Senior Minister of State, Dr. Aline Wong, was set up in 1999 to review teacher education to meet the challenges posed by the reform initiatives. As a result, a new conceptual framework of teacher education--the Desired Outcomes of Initial Teacher Training--was adopted for teacher education in the new era. Specific changes to initial teacher education as well as structural and systemic changes in NIE were recommended. Following the Ministerial review, the vision of "An Institute of Distinction" was adopted and three key strategic thrusts identified, namely 1) delivering quality teaching training programmes through a programme-driven matrix organizational structure; 2) spearheading specific areas of research to meet national needs and working toward world-class reputation in educational research; and 3) developing an excellent corporate support structure. In December 2000 NIE moved to a S\$400 million purpose-built campus on the grounds of the Nanyang Technological University.

There has been a strong tendency to emphasize structural and organizational issues in discussing needed changes in teacher education. This tendency, we believe, needs to be balanced with clarifying conceptual issues essential to teacher education in the new era, such as what the new teaching entails, what teachers need to know and to be able to do in order to teach the new ways, and how they can be prepared--educated or trained--to teach. It could be argued that the present discourse in teacher education in Singapore reflects political and economic considerations rather than on the substantive conceptual issues of teacher education.

This article attempts to clarify some conceptual issues essential to teacher preparation in the era of new educational initiatives, through analysing and critiquing the historical conceptual orientations and current trends of teacher preparation in Singapore. The term teacher preparation refers to the phase of initial teacher education conducted in NIE, including the teaching practicum in schools. This article first describes the historical orientations of Singapore's teacher preparation programmes in terms of the technological, the practical, and the transformative, showing that the technological and the practical have predominately governed the thought and practice of initial teacher education over its history. This is followed by a discussion of the conceptual orientations in current efforts to restructure initial teacher education programmes. This analysis reveals that the technological and the practical continue to be two dominant conceptual orientations which, combined together, support the long-standing training model of teacher preparation. The third part of the article is a critique of three core assumptions of teacher preparation as training, concerning what teaching is, the primary purpose of teacher preparation, and the role of practical experience. We argue that the technological and the practical orientation, allied with the training model, cannot capture the complexity of teacher education; nor can they stand up to the challenges to teacher preparation created by the current educational initiatives. Efforts to reform initial teacher education, we believe, require challenging the assumptions of teacher preparation as training. This article concludes with discussing how teaching, the primary purpose of teacher preparation, and the role of practical experience should be re-conceptualised for attempts to reform teacher education in Singapore.

Clarifying some basic conceptual issues essential to teacher preparation has real significance. It allows teacher educators to identify the central tasks and core activities that logically and practically belong to initial teacher education, and informs and guides teacher educators in programme development and implementation in response to the new challenges. In a time when initial teacher education is shaped by external factors more than by a clear conceptual understanding, this kind of analysis is essential. We hope our work will provide a departure point for further attempts to re-conceptualise initial teacher education in Singapore in the era of new educational initiatives.

Historical Orientations

To appreciate how teacher preparation in Singapore developed its characteristic configuration and where some of the major assumptions of teacher preparation have come from, we need to know something about the history of Singapore's teacher preparation.

The historical development of teacher preparation in Singapore, broadly speaking, involved four phases. First, there was the period from 1950 to 1972, aimed at meeting the quantitative demands for teachers following the expansion of schooling after the war, with training provided by the Teachers Training College, a unit of the Ministry of Education. This phase was characterized by a model of teacher training derived from the traditional normal school curriculum, which comprised three components: 1) educational theories and subject matter, 2) pedagogical courses or teaching methods, and 3) teaching practicum. Then there was the phase from 1973 to 1981, characterized by qualitative

improvement in teacher training, which began with the establishment of the Institute of Education (IE). In this phase emphasis was placed on (a) improving pre-service teachers' insights into the teaching process, (b) increasing their awareness of national, regional and international issues, and (c) improving their competence in classroom management, communication, and use of educational technology. The third phase was the period from 1982 to 1990, characterized by a concerted effort to integrate the programmes designed for different languages of instruction and specialization, and the introduction of the "practicum curriculum," which highlights the central role of practical experience in the process of teacher education. The fourth phase ran through most 1990s, characterized in the formal upgrading of teacher education to university level, termed "universization" (Sharpe & Gopinathan, 1993). In 1991 the National Institute of Education (NIE) was founded, and it became a part of the Nanyang Technological University (NTU). Programme modularisation was used as a structural device to streamline the provision of teacher education within modules, each of which was complete in itself, in terms of the content (Sim & Ho, 1994; Gopinathan et al., 1999).

Three conceptual orientations can be identified in this short history of teacher preparation, namely, the technological, the practical, and the transformative, each of which is associated with a particular set of assumptions about teaching, learning to teach, and teacher education. Rooted in the training model of traditional normal schools, the technological and the practical have co-existed throughout the history, representing two primary conceptual orientations in Singapore's teacher preparation. The transformative, by contrast, has existed primarily during the second phase of development, constituting a conceptual orientation with rather weak impacting power.

The technological orientation viewed teaching as primarily the transmission of knowledge, skills, and values from teachers to students, which is enabled by pedagogical theories, skills, and techniques. Accordingly, the central task of teacher preparation was believed to be training pre-service teachers for mastering pedagogical theories, skills, and techniques. Throughout the history, teacher education programmes in Singapore had been committed to helping pre-service teachers develop competence in classroom teaching and management, and in use of instructional technology (Wong, 1974; 1990; Sim & Ho, 1990). Classroom competence was measured through the demonstration of a predetermined set of skills, such as planning, instructing, communicating, managing, and evaluating (Sim & Ho, 1990). The competence was believed to be strengthened and enhanced by the employment of instructional technology referring to "a systematic method of designing, planning, implementing, and evaluating the total process of teaching and learning based on specific objectives", through "utilising appropriate media in terms of their availability, suitability, and cost effectiveness in reaching learners" (Tan & Chen, 1982, p. 119). Instructional technology, media and communication courses had been part of the teacher-training curriculum since 1975. From 1987 onwards, all pre-service teachers were required to take a compulsory course in the use of computer application software and computer assisted instruction courseware (Tan & Chen, 1990). Emphasis on the use of instructional technology was an essential feature of the technological orientation. "Efforts to make the best use of technology have been almost synonymous with efforts to increase the quality and availability of education at affordable costs" (Tan & Chen, 1990, p. 108).

Holding highly compatible conceptions of teaching, the central aim of teacher preparation, and the role of practical experience, the practical orientation has gone hand-in-hand with the technological one. An essential feature of this orientation in the eighties was its endorsement of the primacy of practical experience as a valid source and a means of learning theories, procedures and skills essential to effective teaching. The underlying philosophy was that "trainee teachers should come to grips early in the programme with the practicalities of learning and teaching in the primary/secondary schools and maintain a reflective attitude toward the experience of teaching" (Ho, 1992, p. 5). Illustrative of this tradition was the central place of the practicum in training pre-service teachers for mastering pedagogical theories, skills, and procedures. Broadly speaking, the practicum referred to "all those activities which involves student teachers in practice-based situations or in observing or helping teachers", including "class teaching experiences in a school setting, micro-teaching experiences on campus and interactions with pupils and staff colleagues" (Ho, 1991, p. 1). Its purposes include

- To develop greater understanding of children through closer contact with them;
- To develop knowledge and understanding of the school curriculum;
- To experience success in teaching situations and so acquire confidence;
- To develop effective teaching skills and strategies;
- To develop the ability to plan and organize for teaching;
- To develop a capacity for self-evaluation;

- To develop qualities of adaptability and sensitivity to the school situation; and
- To develop the ability to reflect on and learn from the school experience (Ho, 1991, p. 2).

At the core of the practicum was the 10 weeks of school practice where pre-service teachers applied theories to the classroom situations, and further acquired and developed procedures and skills essential to teaching. Skills training components included writing clear statements of objectives and rationales, selecting appropriate instructional materials, giving effective instructions and explanations, managing pupil behaviours and activities, offering practice and feedback, etc.

The third orientation, the transformative, stressed that teaching is less a matter of employing a body of procedures, methods, and techniques, and more a matter of facilitating, encouraging, and motivating the learner in the learning process. The then Minister of Education held that teacher preparation should be concentrated on preparing pre-service teachers for a change of role from the teacher as "a middleman handing down a static body of knowledge" to the one as "an inspirer who could instil in his students an unquenchable thirst for knowledge and expose them to the art and technique of acquiring new knowledge" (Ong, 1968, cited in Sim & Ho, 1990, p. 157). In addition to cultivating professional competence and skills, teacher preparation had to include an equally desirable development of mental and moral attitudes. It had a great deal to do with the all-round development of pre-service teachers (Wong, 1974; 1990). Therefore, this orientation argued for a broader base of initial teacher education which included

1. To provide for the liberal education of teachers;
2. To provide for an extended scholarly knowledge of the subject or subjects to be taught;
3. To provide for the development of insights into child psychology, into the learning process, into the meaning and purpose of education particularly in relation to the problems of student teachers;
4. To help the trainees to acquire the art of teaching through carefully guided apprenticeship or attachment on the principle that an art is best acquired by practice under direction and criticism;
5. To provide comprehensive training that will enable teachers to contribute to the all-round development of the pupils under their care; and
6. To provide conditions of community to develop personality and leadership (Doraisamy, 1990, pp. 10-11).

Compared to the technological and the practical, the transformative seem to have exerted a much weaker influence on the thought and practice of initial teacher education. The technological and the practical represent two dominant conceptual orientations in the history of Singapore's teacher education. This is probably due to the fact that while policymakers and teacher educators used the language of liberal education in discussing transformative teacher education, the reality of instruction both in the schools and the training institutions was of a content-dominated, top-down, assessment-driven system.

Current Trends

Current efforts to restructure teacher preparation can also be conceptualised in terms of the technological, the practical, and the transformative. They can be viewed as a continuation and a strengthening of the three historic orientations of teacher preparation in Singapore.

The technological trend emphasises training pre-service teachers for a wide range of skills or competences vital for effective classroom teaching in the new era. In NIE there is a proliferation of curricular modules designed to train pre-service teachers for mastering various skills and procedures. According to the Desired Outcomes of Initial Teacher Training, pre-service teachers are expected to

- Have skills for managing pupil welfare
- Be able to encourage their pupils to do their best
- Have sound pedagogical skills
- Be able to use of various forms of assessments
- Be able to confidently apply classroom management strategies
- Be able to use information technology effectively
- Be able to apply research findings in teaching and learning
- Have good communication skills

- Be able to manage time and stress

Among the above learning outcomes, the competence in using information technology in teaching has received particularly high attention. Under the IT-master plan, NIE has been given the responsibility of ensuring that all beginning teachers are equipped with the necessary IT skills and pedagogical techniques to enable them to function effectively in an IT-enriched classroom environment. These basic IT skills include word processing, presentation software, web publishing, spreadsheet, multimedia authoring. The IT-related pedagogical techniques are built into content in instructional planning, visual design, computer-based learning, selection and evaluation of computer-based learning packages, computer tools for higher-order and creative thinking, use of the Internet in education, application and design of multimedia/hypermedia in education, design of classroom activities for IT-based teaching and learning, and integration of CD-ROM packages and Internet resources into teaching of school curriculum subjects (Koh, 1998). Another significant competence is being able to teach higher-order thinking skills and to foster creativity in pupils. In response to the introduction of critical thinking and creativity into the curriculum, all pre-service teachers are currently being trained to acquire a body of pedagogical strategies, skills or techniques that allow them to teach higher-order thinking and creativity in both curricular and non-curricular contexts.

The current practical trend continues to emphasize the crucial role of practical experience in learning pedagogical theories, skills, and procedures. To ensure a more extensive and effective use of practical experience in teacher preparation, a set of new measures has already been put in place. First, many pre-service teachers now can have more school experience, in addition to the 10 weeks teaching practicum. The MOE has adopted a year-round recruitment strategy with selected applicants posted to schools, prior to beginning their NIE programme. Second, in the belief that teacher training will benefit greatly if it draws more fully upon the practical wisdom of school practitioners, the Ministry has urged NIE to more actively use practitioner expertise. As a result, school principals and senior officials from MOE have been appointed as adjunct lecturers or full-time staff at NIE to provide relevant feedback on curriculum and teaching methods. Third, a schools-NIE partnership model has been implemented, which allows school practitioners to be more centrally involved in initial teacher education. Heads of departments and senior teachers have acted as mentors to guide and oversee the practicum. NIE faculty is playing a moderating role to ensure some comparability in standards with regard to assessment (Gopinathan, Ho, & Tan, 1998).

The last trend involves a renewed commitment to the transformative orientation of teacher education. We see renewed interest in the moral and character aspects of teacher preparation. According to the Ministry's vision of Thinking Schools, Learning Nation, teachers are responsible of "moulding the character of the next generation of Singaporeans, equipping them with the skills for lifelong learning and developing a sense of rootedness to Singapore", and therefore, they are expected to become "role models in strong values, thinking, learning and innovating" (Wong, 2001). There is an attempt to return teaching to its origins as a moral endeavour, with teachers' personal qualities such as commitment, integrity, dedication, and care for pupils being emphasized. All programmes in NIE adopt the ASK (attitudes, skills, and knowledge) framework--which emphasizes attitudes, values, and integrity over and above content mastery and specific teaching competencies—to highlight the need to develop desirable values and dispositions in pre-service teachers. To inculcate national values and instincts of pre-service teachers, NIE engages the help of defence specialists in conducting seminars on national education issues.

In spite of the above measures, however, the significance of transformative teacher education, as will be discussed in the succeeding section, has neither been fully recognized nor realized. While there are differences in beliefs about the types of skills, procedures, and technology essential for pre-service teachers between the technological orientation and its current trend, between the practical orientation and its new trend, three basic assumptions--which support the long standing model of teacher preparation as training--remain intact:

1. Teaching is primarily a transmission of knowledge, skills, and values from teachers to students, enabled by a predetermined set of skills, procedures, and techniques;
2. The central task of teacher preparation is training teachers for skills and procedures; and
3. Practical experiences provide the valid source and a means for learning to teach.

In what follows we question the above three core assumptions associated with these two orientations, to unveil the limitations, problems, and pitfalls inherent in the training model of teacher preparation.

The Meaning of Teaching

According to Philip Jackson (1986), there are two strikingly different traditions of teaching and being a teacher in human history, the mimetic and the transformative. The mimetic conceives of teaching as technique, which is concerned primarily with the transmission of knowledge, skills, and value from teachers to students. To teach in the mimetic tradition, a teacher needs to employ a body of predetermined pedagogical skills and procedures. The transformative, on the contrary, views teaching as a human, intellectual and moral endeavour, which is concerned with the transformation of character, beliefs, and thinking of students. To teach in the transformative tradition, a teacher does not have specifiable procedures and formulas to follow; he/she needs to be a role model, a facilitator, and a storyteller, being able to engage students in conversation and to challenge their thinking. Teaching, therefore, cannot be reduced to technique.

Apparently, the conception of teaching, embodied in the technological and the practical orientation, is in essence mimetic. It is concerned primarily with the transmission of knowledge and skills; it relies exclusively on a set of procedures, skills, and techniques; and it unreservedly embraces technology. While currently there is a growing concern about the transformative aim of teaching and a renewed commitment to the transformative orientation of teacher preparation, a full conception of transformative teaching is virtually lacking in our discourse on teacher education.

The technical conception of teaching falls short of capturing the uncertainties and complexity of the kind of teaching envisioned in current educational reform initiatives. To implement the new initiatives, teachers need to create and cope with a new kind of learning environment, where teaching is uncertain, sophisticated, and challenging. As Wong (1998) stated,

...our teachers need to cope with a new type of learning environment where the teacher may not always know more than their students. Our students today have access to a tremendous amount of information through the Internet and other sources. Their learning is no longer confined to the classroom. Teachers must be prepared to explore, experiment and learn together with their students. This is a departure from the old paradigm where teachers were dispensers of knowledge. Now they must facilitate students' learning process, teach them how to access and critically evaluate information, and how to arrive at solutions to problems.

More specifically, to implement the IT-masterplan initiative, teachers need to guide students to tap into a variety of relevant IT resources, encouraging communication and discourse within and beyond the local community. Teachers need to continue to challenge students' understanding and thinking. Furthermore, teachers need to cultivate students' independent learning, critical thinking and creativity (see Deng & Gopinathan, 1998). In this new kind of learning environment, teachers are not primarily concerned with transmitting a body of ready-made knowledge and facts to students, but rather with engaging students in the process of generating, constructing and reconstructing knowledge. Teaching becomes less a matter of employing a predetermined set of procedures and skills, and more a matter of guiding, encouraging, and facilitating.

Furthermore, the technical conception of teaching is fundamentally incompatible with the one allied with current reform initiatives, in which developing the character, values, and motivation of students becomes of utmost importance. In the Desired Outcome of Education, there is a broad set of transformative goals that have been called character, moral development, good conduct, and citizenship. Teachers are entrusted with the responsibility of modifying character and action, instilling values and beliefs, shaping attitudes and interests of the future generations. To fulfil these aims and responsibility, they need to be role models, being living exemplars of certain desirable values and attributes (Wong, 1998). They need to be good guides and facilitators, directing and engaging students in search of meaning and truths as well. Further, they need to be effective storytellers, using parables, myths, and other forms of narratives to convey values and morals (Jackson, 1986). There is no a set of specifiable procedures and skills to employ; teaching, therefore, cannot be reduced to a kind of technique. When transforming character, perspectives, attitudes, and values is the primary concern, teaching is essentially a human endeavour--a moral and a philosophic undertaking. It is moral because it is guided by an appreciation of the important social ends it serves, and it seeks these ends—trying to bring about desirable changes in the characters, beliefs, and values of students. It is philosophic

because it employs philosophic means—such as discussion, demonstration, and argumentation—to bring about changes in students, morally and intellectually (Jackson, 1986). In other words, teaching involves social purposes and responsibilities that are both morally and intellectually grounded.

As far as teacher preparation is concerned, a tendency inherent in the mimetic conception of teaching is particularly worrisome, which is the one of reducing teaching to nothing but skills and procedures, which treat skills and procedures as an end in themselves, not as a means to some specified educational goals or outcomes. This tendency, intensified by current unwavering embrace of information technology, creates the danger of overlooking and undermining the moral and intellectual dimension of teaching and being a teacher in designing and implementing teacher preparation programmes. It engenders the pitfall of equating improvements in educational quality with technical advances in instruction--as already indicated in the foregoing section. In short, it creates the danger of "dehumanisation" in education in general and teacher education in particular (Jackson, 1986).

Teacher Preparation: Training or Education?

There is an essential difference and tension between the terms "training" and "education". According to Peters (1966), training is concerned primarily with the development of certain skills, procedures, and modes of thought; it doesn't have to deal with the beliefs and perceptions of the person undergoing the training. Education, on the other hand, has linkage with a system of beliefs and perceptions. Its main concern is with initiating the person into a set of worthwhile beliefs and perceptions.

Clearly, teacher training—rather than teacher education--represents the primary emphasis in teacher preparation in Singapore in the history as well as today. The term teacher training has been used frequently and pervasively in our discourse on teacher education. Teacher training is practically and technically oriented in the sense that knowledge, procedures, and skills taught are supposed to have a direct bearing on teaching and classroom management (Lanier, 1986). The use of the term commits teacher educators to some courses of action in educating teachers and rules out others. The central task of teacher preparation is to help pre-service teachers acquire knowledge, procedures, skills, techniques, and practical experience for teaching needed for teaching. It doesn't entail the necessity of transforming the beliefs and perceptions of pre-service teachers.

It is conceptually parochial and troublesome to define teacher preparation in terms of training. Teacher behaviour and action are a function of perceptions and beliefs; perceptions and beliefs guide and dictate the way the teacher behaves and acts. Accordingly, teachers' beliefs and perceptions are more important than their specific behaviours, procedures, and techniques. The problem of helping pre-service teachers learn to teach the new ways must be recognized as having to do with their beliefs and perceptions (Combs, 1965; 1972). It is a conceptual problem, not merely a behavioural one.

Implementation of the IT-masterplan initiative, for instance, requires a sea change in teachers' beliefs and assumptions. Acquired from their previous school experiences as students, pre-service teachers tend to view knowledge as a body of proven facts or factual information contained in government-approved school textbooks, which students are tested on during examinations. Accordingly, they are inclined to describe teaching in terms of giving out or imparting knowledge in school textbooks, and learning in terms of acquiring, memorising, and practising this knowledge. This set of beliefs and assumptions would steer them to adopt the conventional form of classroom practices. To teach in accordance with the expectations of the IT-masterplan, however, they need to recognize that knowledge is available from a variety of sources and is subject to renewal and revision. They need to rediscover knowledge as something that is constructed and contestable, rather than handed down by authorities. They need to realize that students learn best, in terms of conceptual understanding and higher-order thinking, when they are actively engaged in the search for information, solving problems, questioning, sharing and communicating their understanding. They need to re-conceptualise their roles to encompass those of being a co-learner, a learning guide, and a facilitator. This set of new beliefs and assumptions is fundamentally different from the one pre-service teachers tend to hold when they enter the teacher preparation programmes. Helping pre-service teachers learn to teach in the new ways, therefore, requires helping them develop a set of new beliefs and assumptions through challenging and transforming existing ones (Deng & Gopinathan, 1998). It requires education, not merely training.

Transforming the beliefs, character, attitudes and values of pre-service teachers indeed represents a very significant task for teacher preparation today. The newly adopted ASK framework emphasizes attitudes, values, and integrity of teachers over and above their content mastery and teaching competence. Teachers are entrusted with the responsibility of moulding the character of future Singapore generations, and of equipping them with the potential for critical thinking, creativity, and life-long learning. This requires teachers to be the role models, learning exemplars of certain desirable characters, beliefs, values, and dispositions of mind. The content mastery and classroom competence of pre-service teachers, to a very large extent, can be attained through training. However, becoming role models cannot be achieved simply through training pre-service teachers in needed knowledge, skills and procedures. There are virtually no specifiable procedures and skills for being role models. It requires education that is centred upon initiating pre-service teachers to a set of worthwhile beliefs, perceptions, and values that is intent on transforming the character, beliefs and perceptions of pre-service teachers. Overemphasis on training pre-service teachers in knowledge, skills, and procedures would destroy the real essence of teacher preparation.

There is a need to clarify that we do not mean to downplay the importance of practical knowledge, technical skills, and procedures for teachers. Without necessary knowledge, skills, and procedures, teachers would be able to function effectively in classroom situations. However, knowledge, procedures, and skills alone do not ensure the kind of teaching that is centred upon student learning, higher-order thinking, and creativity. Our primary concern is that the training model of teacher preparation—which is effective in producing classroom technicians and disciplinarians who will uncritically continue traditional classroom practices (Lanier, 1986)—falls well short of producing teachers needed in the era of new educational initiatives—teachers who need to fulfil the roles of a facilitator, a learning guide, a co-learner, a role model, and an innovator. The training model is well adaptive for a period when few teachers will remain long in the classroom. However, it would have serious consequences in the era when career teachers, commitments, and dedication become of utmost significance (Lanier, 1986).

The Role of Practical Experience

We now turn to question the assumption that practical experiences provide the valid source and a means for learning to teach. Associated with the technological and practical orientation, the kind of practical experience, created mainly by the teaching practicum, is primarily skill and procedure oriented. There is a strong tendency to concentrate on mastery of specific procedures and skills, the maintenance of classroom order and discipline, rather than encouraging pre-service teachers to carefully reflect upon and examine issues related to pupil learning, assessment, and the school contexts (Sharpe, Moo, Crawford, & Gopinathan, 1994). The Assessment of Teaching Performance (APT) form—which NIE uses—is centred upon the acquisition of needed procedures, skills, and appropriate behaviours in relation to lesson planning and delivery, communication, classroom management, and evaluation. Under these circumstances, when using practical experience to master classroom management and teaching techniques, pre-service teachers are likely to be focused on the external behaviour of pupils, rather than their internal dispositions and learning processes. They are thus likely to develop and maintain a narrow, technical view of teaching, which is centred upon particular skills and procedures.

Furthermore, too much emphasis on learning from practical experience tends to reinforce the "reflexive conservatism" (Lortie, 1975), making it difficult to see the range of possible classroom practices available (Buchmann & Schwille, 1993). The classroom practices widely prevailing in Singapore schools, in general, tend to be examination-oriented, with an emphasis on the acquisition of knowledge from textbooks. Teachers see their role primarily as transmitting knowledge and skills to students through didactic telling and some limited doing, while students are expected to absorb knowledge and skills through passive listening, watching, drilling, and practising (Chew, Ng, Lee, & D'Rozario, 1997; Kaur & Yap, 1997; Khoo & Ng, 1985; Toh, 1994). Due to various reasons—e.g., the concern of teaching performance assessment of their own, and of the prevalence of high stakes examinations of pupils under their charge, pre-service teachers tend to accept the on-going patterns and beliefs demonstrated by their experienced mentors. Over emphasis on learning from practical experiences would create a continuation of the existing classroom practices and a tendency to see the on-going patterns of classroom practices and beliefs exhibited by school mentors as the only ones possible. It produces copiers and followers of traditions and prevailing examples. These will be inherent limitations in both growth and learning of pre-service teachers, resulting in a lowering of aspiration and an unquestioning commitment to the realities of present day schooling (Buchmann & Schwille, 1993). This of course assumes that little change in pedagogy is taking place in schools, which is generally true based on our observation of classroom practices and supervision of

the teaching practicum. If we assume that some schools have innovative practices, then the challenge to the teaching practicum is to give student teachers enough exposure to these schools.

It is important to point out that we do not mean to reject practical experiences as an important source and a means for learning to teach. Practical experience, we believe, can be extremely valuable, but its value depends on how pre-service teachers are prepared to learn from it. As will be argued in what follows, learning from practical experiences should be guided and informed by educational theories and principles from foundational studies.

Discussion

The training model of teacher preparation, allied with the technological and the practical orientation, cannot adequately represent the essence of teacher preparation required in the Singapore contexts of new educational initiatives. Questioning the three core assumptions underlying the training model entails a need for re-conceptualising teacher preparation in terms of education. In this section we venture to sketch some initial thoughts on how to conceptualise teaching, the primary purpose of teacher preparation, and the role of practical experience in response to the new challenge. This is, we repeat, a sketch of what can be thought of for more work needs to be done in order to provide a thorough and well-grounded conceptualisation of teacher preparation in the era of new educational initiatives.

We shall start with the conception of teaching. A broader conception of teaching is needed to provide some well-grounded guidance for teacher preparation. Unless teacher educators are clear about what constitutes teaching, they will remain hopelessly muddled (Wilson, 1975). There is a need to break away from the narrow, mimetic, technical conception of teaching, and to embrace the wider, more humanistic one. Teaching should not be conceived as technique, but as a human endeavour involving intellectual and moral dimension. Teaching should not be seen as merely delivering a body of knowledge and skills to students; it involves transforming the character, values, beliefs, thinking and actions of students. It is less a matter of performing a body of specifiable skills and procedures, and more a matter of guiding, facilitating, and encouraging. Teaching entails a way of life, being a role model in character, values and beliefs. "Good teaching cannot be reduced to technique; good teaching comes from the identity and integrity of the teacher" (Palmer, 1998, p. 10).

This broader conception of teaching implies that the central purpose of teacher preparation should not be conceptualised in terms of training pre-service teachers to acquire needed skills and procedures. It should be seen in terms of educating pre-service teachers for developing a body of worthwhile beliefs, values, and attitudes essential for being a good teacher. This is the spirit of the ASK framework for teacher education. In addition, the current teacher training scheme by the Ministry of Education requires that each incoming teacher undergoes three phases of teaching training: 1) foundation training in NIE, 2) induction training by the Ministry of Education and schools, and 3) basic training in schools. In other words, the Ministry and schools assume primary responsibility for the skill training of newly qualified teachers, and accordingly, skill training is not the proper mission of foundation training in NIE. It is time for NIE to break away from the older traditions that are directly practical and technical, and to re-invent initial teacher education programmes that are more normative, transformative, innovative, and resilient, in the light of the new challenges. Strengthening and re-instituting foundational (educational) studies, we believe, can serve this purpose.

In the first place, foundational studies should engage pre-service teachers to think, discuss, and explore the fundamental questions for education. Some of these questions are: What are the aims of education? How do human beings learn? What is the relation of school to society? What knowledge is of most worth? How is teaching best approached? What does it mean to be a teacher? What moral obligations do a teacher need to have? These are persistent and perennial educational questions that "well-educated educators need to meet and wrestle with them and incorporate them into their consciousness throughout their whole careers if they are to be truly educated professionals" (Soltis, 1990, p. 313-314). A continuous exploration of the fundamental questions of education improves classroom practices not in a how-to fashion, but by asking critical questions, by instilling the desire to improve planning and action, by awakening teachers to the moral and normative dimensions of classroom practice. In the today's context of new initiatives, investigating these questions takes on a new urgency. Since teachers are the key to the reforms and moulders of future generations, they must raise and answer these questions in their classrooms. Investigating these questions challenges teachers to think—or learn to think—about education more critically. It leads them to the realization that education is in essence a human enterprise--moral and intellectual, and in so doing, it helps teachers

see the limitations and dangers of over-reliance on technology. It motivates and inspires pre-service teachers to become role models, lifelong learners, and more caring and reflective professionals.

In the second place, foundational studies should provide pre-service teachers with a broad professional knowledge base which consists of professionally relevant philosophical, psychological, sociological, and historical knowledge. It should also help pre-service teachers understand the school curriculum content from the standpoint of its educational value and use, as well as master educational principles in their application to that curriculum content (Dewey, 1904). This provides a counter-balance to a preponderance of skill training in the preparation of future teachers. The professional knowledge base can enable them to think about and discuss fundamental education questions and to search for solutions. It can be used to inform and improve classroom practices as well. Furthermore, the knowledge base can facilitate professional communication and life-long learning. Without a broad professional knowledge base, our teachers will be "merely literate technicians rather than broadly educated and morally sensitive literate professionals" (Soltis, 1990, p. 315).

In the third place, the learning of basic pedagogical skills and techniques should be grounded in the knowledge base, integrated in the acquisition of professional knowledge. Skills and techniques need not to be purely technical; effective employment of skills and techniques in teaching requires a firm grasp of educational theories and a thorough analysis of the classroom situations and issues. To this end, NIE can adopt more process-oriented integrated approaches to teacher education—approaches like case methods, project work, and problem-based learning--that connect professional knowledge with the understanding of the school curriculum content, with the employment of pedagogical skills and techniques, and with the use of instructional technology. Such approaches place greater emphasis on student empowerment, critical thinking and creativity. They create more opportunities for independent learning and group/project work.

In the light of the reconceived central purpose of teacher preparation, the aim of practical experience should be viewed as providing opportunities for the development of understanding, beliefs, values, dispositions, and ways of thinking that are essential for being a good teacher, in addition to the mastery of specific pedagogical skills and techniques. To this end, the teaching practicum should create opportunities for pre-service teachers to acquire specific skills and techniques in ways that are guided and informed by professional knowledge. It should be used for developing deeper understanding of the ways concepts and principles from psychology, curriculum, sociology, history and philosophy are played out in classrooms. Such understanding would enable pre-service teachers to provide better instruction, make better curriculum choices. In Shulman's (1998) words, the aim of practical experience is "the immediate preparation not of skilled practitioners, but of reflective professionals who are disposed to examine their teaching and their students' learning critically" (p. 514-515).

Concluding Remark

Singapore's current state of development in teacher preparation offers some unique opportunities for charting a new course. Previous conceptual frames for teacher preparation were built upon dominant paradigms that emphasised skills and content mastery; the need to produce large numbers of teachers quickly to meet the expansion of student enrolment reinforced this tendency. The radical reforms that are being proposed and implemented in schools make teacher preparation reform as imperative and not just a matter of choice. Learning to think and thinking critically and creatively should become the hallmark of teacher preparation programmes in Singapore.

References

Buchmann, M., & Schwille, J. R. (1993). Education, experience, and paradox of finitude.

In M. Buchmann & R. E. Floden (Eds.) *Detachment and Concern: Conversations in Philosophy of Teaching and Teacher Education* (pp. 19-33). London: Cassell.

Chew, J., Ng, M., Lee, C., Ambrose-Yeoh, A., Boo, H. K., D.Rozario, V., Jacobs, G. M.,

- & Gallo, P. B. (1999). What teachers do: vignettes of group work in some Singapore primary classrooms. Paper presented at joint conference of the Malaysian Educational Research Association and the Educational Association (Singapore), 1-3 December, 1998, Malacca, Malaysia.
- Combs, A. W. (1965). *The Professional Education of Teachers: A Perceptual View of Teacher Preparation*. Boston: Allyn and Bacon.
- Combs, A. W. (1972). Some basic concepts for teacher education. *Journal of Teacher Education*, 23 (3), 286-290.
- Deng, Z. & Gopinathan, S. (1999). Integration of information technology into teaching: The complexity and challenges of implementation of curricular changes in Singapore. *Asia-Pacific Journal of Teacher Education & Development*, 2 (1), 29-39.
- Dewey, J. (1904). The relation of theory to practice in teacher education. In C. A. Murry (Ed.), *The Relation of Theory to Practice in the Education of Teachers* (3rd yearbook of the National Society of the Scientific Study of Education, Part I, pp. 1-30). Chicago: University of Chicago Press.
- Doraisamy, T. R. (1990). The relationship of the theoretical and practical in teacher education. In W. K. Ho (Ed.) *Teacher Education in Singapore: Change and Continuity in Curricular Perspectives* (pp. 8-17). Singapore: Institute of Education.
- Gopinathan, S., Ho, W. K., & Tan, J. (1999). Teacher education and teaching in Singapore. *Asia-Pacific Journal of Teacher Education & Development*, 2 (1), 3-14.
- Ho, W. K. (1991). *The practicum in teacher education*. Paper presented at the In-house Seminar on Teaching Practice Assessment and the APT form, Institute of Education, Singapore.
- Ho, W. K. (1990). *Teacher Education in Singapore: Change and Continuity in Curricular Perspectives*. Singapore: Institute of Education.

- Kaur, B. & Yap, S. F. (1997). *KASSEL Project Report (NIE-Exeter joint study) Second Phase (October 95 – June 96)*. Unpublished research report, Division of Mathematics, National Institute of Education, Singapore.
- Khoo, M., & Ng, S. M. (1985). Reading Instruction in Lower Primary Classes: A Second Observational Study. *Singapore Journal of Education*, 7, 55-64.
- Koh, T. S. (1998). IT masterplan implementation at the National Institute of Education: An overview. *Proceedings of the 12th Annual Conference of the Educational Research Association* (pp. 76-82). Singapore: Educational Research Association.
- Jackson, P. (1986). *The Practice of Teaching* (ch. 6). New York: Teachers College Press.
- Lanier, J. E., & Little, J. W. (1986). Research on teacher education. In M. C. Wittock (Ed.), *Handbook for Research on Teaching* (3rd ed.) (pp. 527-569). New York: Macmillan.
- Lortie, D. C. (1975). *Schoolteacher: A Sociological Study*. Chicago: University of Chicago Press.
- Palmer, P. J. (1998). *The Courage to Teach: Exploring the Inner Landscape of A Teacher's Life*. San Francisco: Jossey-Bass Publishers.
- Peters, R. S. (1966). *Ethics and Education*. London: George Allen & Unwin Ltd.
- Sharpe, L., Moo, S.N., & Crawford, L., & Gopinathan, S. (1994). *Teacher supervision patterns and discourse*. Singapore: Nanyang Technological University, National Institute of Education.
- Shulman, L. S. (1998). Theory, practice, and the education of professionals. *The Elementary School Journal*, 98 (5), 511-526.
- Sim, W. K., & Ho, W. K. (1990). 25 years of teacher education. In J. S. K. Yip & W. K. Sim (Eds.), *Evolution of Educational Excellence: 25 Years of Education in the Republic of Singapore* (pp. 157-186). Singapore: Longman.
- Soltis, J. F. (1990). A reconcetualization of educational foundations. *Teachers College Record*, 91 (3), 311-321.
- Tan, S. L., & Chen, A. Y. (1990). 25 years of educational technology utilisation. In J. S. K. Yip & W. K. Sim (Eds.), *Evolution of Educational Excellence: 25 Years of*

Education in the Republic of Singapore (pp. 107-129). Singapore: Longman.

Toh, K. A. (1994). Teacher-Centred Teaching is Alive and Well. *Teaching and Learning*, 15 (1), 12-17.

Wilson, J. (1975). *Educational Theory and the Preparation of Teachers*. Windsor, England: National Foundation for Educational Research.

Wong, A (2001). Speech by Aline Wong at the NIE Corporate Seminar, 10 February 2001.

Wong, A (1998). *The teacher is the key*. Speech given to NIE students, 9 May 1998.

Wong, R. H. K. (1974). *Educational Innovation in Singapore*. Paris: The Unesco Press.

Wong, R. H. K. (1990). Teacher education and change. In W. K. Ho (Ed.) *Teacher Education in Singapore: Change and Continuity in Curricular Perspectives* (pp. 18-28). Singapore: Institute of Education.

These might not be the best ways to conceptualise...and to ..., but we do believe that this is a kind of middle range conceptualisation we need to have ..Only just a beginning, we need to explore and understand more fully..We have talked so far only about what might be the core. It is time to reconceptualize... We hope that...