

Curriculum framework for preparing quality teachers for the future: Developing guiding principles

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Globalization is constantly impacting on education and is radically transforming it in terms of the mode and culture of learning. The shift from product-economy to knowledge-economy has profound implications for the kind of education a nation has to offer its future generation. The need for knowledge workers places emphasis on new attributes for learners, particularly those which pertain to twenty-first century skills. The last decade and a half has also seen the emergence of international student ranking lists such as TIMSS, PISA, PIRLS, Olympiads, which have put tremendous pressure on education ministries. A response to this pressure of 'rank and shame' has been a flurry of education reform initiatives, including in Malaysia. The ability to develop learners who can think critically and creatively and to reason logically and to innovate is the challenge in education. The Malaysia Education Blueprint 2013-2025 has identified teacher education among the eleven shifts to transform the Malaysian education system. This paper will discuss how guiding principles for a teacher education curriculum framework is being developed in line with national needs and demands of international trends. Focus on teacher education would directly involve an investigation of teacher education curriculum, namely its planning, management and development. This concern is imperatively linked to the values, skills and knowledge of teachers. A teacher education curriculum framework needs to strike a balance between standardization and allowing for flexibility and creativity so that teacher education does not stifle the creativity and holistic growth of teachers and their students.

Keywords: Teacher Education; Curriculum Framework; Malaysia.

Introduction

There is currently a world-wide concern over the quality of education in schools and it is perceived to be at the heart of contemporary debate on public education in Malaysia too. Since the Razak Report (1956) and the Education Ordinance (1957) Malaysia, various policies and curriculum changes have been attempted to offer quality education (Ratnavadivel, 2007). The last decade and a half has also seen the emergence of

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international student ranking lists such as Trends in International Mathematics and Science Study (TIMSS), Program for International Student Assessment (PISA), Progress in International Reading Literacy Study (PIRLS) and the Mathematics and Science Olympiads, which have put tremendous pressure on education ministries. A response to this pressure of 'rank and shame' has been a flurry of education reform initiatives (Gopinathan & Letchumy, 2011), including in Malaysia.

Emerging global trends place emphasis on knowledge as the main capital for the development of the individual and the nation. Globalization is constantly impacting on education and is radically transforming it in terms of the mode and culture of learning. The "commodification" of sectors like education and the increased use of technology in all spheres of life, private and public has shifted the main focus of discussion to the specification of 21st century skills and the need for students in schools to master these skills, and for adults, in and out of the workforce to be lifelong learners (Gopinathan & Ponnusamy, 2011). The shift from product-economy to knowledge-economy has profound implications for the kind of education a nation has to offer its future generation.

The need for knowledge workers places emphasis on new attributes for learners, particularly those which pertain to twenty first century skills. Teacher education has moved from the platonic/rationalistic view to the social-market view, subsequently to the hermeneutic view of teacher education as a practical science, and currently to evidence based practice (Elliot, 2002). Philosophies of education have shifted from the traditional philosophies of education (perennialism and essentialism) to contemporary pragmatic philosophies of education (progressivism, re-constructivism and existentialism) which is learner focused and emphasizes the resolving of problems and functioning in one's social environment. Similarly, learning theories have shifted from the emphasis on the traditional behaviorists' theories (conditioning pupils) to cognitive and constructivist theories which pay emphasis to generating and disseminating knowledge and not just the acquisition of information which is often passed off as knowledge. In short, the current global trends place emphasis on knowledge as the main capital for the development of the individual and the nation.

Meeting emerging trends and challenges

Malaysia, in meeting the emerging challenges, needs to focus on developing human capital that will enable it to be an effective player in the global market. Vision 2020 (Mahathir, 1991) emphasizes the need to move from being a consumer society to a society that will be able to generate and disseminate knowledge. The ability to think critically and creatively, and to reason logically is considered to be a prerequisite for developing a nation that will be able to not just adopt or adapt borrowed knowledge but enable the future generation of Malaysians to create and market their own knowledge. The destiny of the nation lies with the quality of education that our schools and teachers engage with our children.

Education is increasingly important to the success of both individuals and nations, and the growing evidence demonstrates that – among all educational resources – teachers' abilities are especially crucial contributors to students' learning. Furthermore, the demands on teachers are increasing. They are now expected to prepare virtually all students for higher order thinking and performance skills needed to function effectively in the 21st century. Therefore current teacher education programme has to prepare its student teachers to become 21st century teaching professionals ready to meet the challenges awaiting them in the 21st century classroom. Research shows us that

exemplary teacher education programmes possess at least the following attributes: close integration of courses that create a coherent experience throughout the programme, well-defined standards of practices and performance, a core curriculum with emphasis on student learning, assessment and content pedagogy, use of problem-based teaching methods, active assessment using case studies and portfolios, drawing on the best practices of skilled veteran teachers in clinical experiences, and extending the amount of clinical exposure as early as possible in the programme (Darling-Hammond, 2009).

Quality education depends on professional teachers and quality learning. Teachers, more than ever, are now required to educate students who can think and reason so as to enable and empower them to function effectively in the knowledge era. The role of teachers in developing this knowledge society is of prime concern to the nation. The quality of education provided in schools depends on the quality of teachers and the quality of teachers very much depends on the quality of teacher education, particularly its curriculum. The curriculum encompasses content, pedagogy and evaluation. The basic question that we need to address is: 'is there a need for a transformative model of teacher education for preparing quality teachers for the future? If so, why and what should be addressed in the teacher education model?'

We argued that that there is a need for a transformative teacher education model for the following reasons:

1. to provide local and subsequently international leadership in teacher education.
2. to respond to rapid changes in the economic landscape, local as well as international, that posit a critical demand for quality human capital, hence quality education, ergo quality teachers and consequently quality teacher education that are aligned with today's and future needs of the nation and internationally (i.e. knowledge economy, millennium development goal, New Economy Model, Government Transformation Plan and the Education Transformation Plan.).
3. to meet increased stakeholders' expectations for quality education, ergo quality teachers and quality teacher education (e.g. National Education Strategic Plan, high performance schools, Teachers' Standards, Malaysia, and the National Education Blueprint 2013-2025.).
4. to respond to intensifying demand for greater efficiency, transparency, and accountability in public sector, including the education sector, hence the imperative for quality teachers and quality teacher education (e.g. National Key Research Areas and National Key Performance Indicators)
5. to confront the challenge of changing values in society fuelled by a borderless world brought about by the rapid advancement in technology (sustainable development, environmental issues, changing moral values, demands of the Y and Z generations).
6. to explore the implications, take advantage of, and extend the latest research findings on effective teacher education (Darling-Hammond & Ann Lieberman 2009, and TE21 of NIE Singapore).
7. to respond to multiple issues that beset local educational landscape (e.g. urban-rural achievement gap, low English language proficiency, low achieving students, and soft skills) seen from the perspective of what teacher education can do.

The need for a transformative model of teacher education raises the question on the current state of approach to teacher education in Malaysia and internationally. Based on our review of literature, we concluded that the local approach to teacher education is situated in the technical rationalist approach (Schon, 1983) with a predominantly behaviorist orientation and the dichotomization of theory and practice, leading to a fragmented view of teacher education. Whereas in the international scenario, successful teacher education programmes like Singapore's TE21, United Kingdom's TLRP, Finland, Netherlands, Hong Kong, and Darling-Hammond's and Ann Lieberman's (2012) research findings showed that the approach to teacher education is inquiry oriented emphasizing on evidence based practice employing reflective rationality, giving attention to the nexus of theory and practice, scholarship of teaching and learning. In a nutshell, the teacher education curriculum is both integrated and trans-disciplinary. It is thus apparent that there is a need for a transformative model of teacher education which has the capacity to develop teachers who can meet the learning demands of the future generation. The desired teacher education programme should be "research-based", relevant to current and future needs, meeting new expectations of stakeholders, be internationally recognized, have the capacity for building the required human capital, and be able to address the needs of the nation.

The underpinning philosophy and conceptual framework of a transformative teacher education model in Malaysia

Drawing from the Philosophy of Education, Malaysia, Philosophy of Teacher Education, Malaysia and the current national and international trends in education, it is contended that the underpinning philosophy of teacher education in Malaysia (particularly Sultan Idris Education University or also known as UPSI) would be in developing teachers who are noble in character, progressive and scientific in outlook, committed to upholding the aspirations of the nation, cherish the national cultural heritages and who continually strive towards the holistic, balanced and integrated development of the intellectual, physical, emotional and spiritual potentials of individuals, based on a firm belief in and devotion to God. Teachers should believe in deep, thoughtful, future oriented life-long learning, and regard learning to be both a personal and interpersonal experience. It is in this proposed philosophical underpinning that the aims of teacher education should nurture teachers who are learners, motivated, confident, innovative and independent, and able to think critically and creatively. They should accept learning as a life-long process for continuous personal and professional development, and have a keen sense of awareness of their responsibility in community and nation building. Furthermore, apart from possessing their subject-specific knowledge and understanding, teachers should develop intellectual skills, and ability to reflect on their own learning, exhibit confidence in the use of information and communication technologies, as well as be aware of their responsibility and obligation to the organisation they serve, and conscious of their role in nation-building.

Given the projected aims of teacher education, the curriculum design and approach to learning and teaching would:

1. place the students at the centre of the learning experience, requiring them to take responsibility for their own learning, and to act with academic integrity, thereby equipping them to be critical, innovative, independent, lifelong learners;

2. provide programmes that are characterised by active and authentic learning, emphasising the development of intellectual, and soft skills in addition to subject-specific knowledge and understanding;
3. work with all stakeholders (including employers, students, parents, the community, major partners such as Ministry of Education, and Teacher Education Institutes) to develop and deliver curricula that engage, challenge and prepare students for their future professional and nation-building roles;
4. ensure appropriate accreditation of the programmes by relevant bodies;
5. extend the commitment to inter-professional learning to encompass all relevant programmes of study;
6. develop opportunities for enterprise education, work-based and work-related learning (e.g. placements, field trips, volunteering);
7. internationalise the curriculum (e.g. study abroad) and reach out internationally through recruitment and partnerships (e.g. joint programmes).
8. deepen understanding of assessment for learning, developing alternative assessment, in addition to assessment of learning outcomes, thus seeking effective methods for diagnostic, formative and summative purposes;
9. offer extensive network of learner support;
10. optimise the student learning experience through continuous student engagement with feedback and with real-life situations;
11. engage policy decision makers and implementers with feedback from students at all stages of the student lifecycle and where possible the alumni community.

It is due to the urgent need to develop a transformative model of teacher education, that UPSI obtained a five-year Niche Research Grant Scheme (NRGS) from the Ministry of Education Malaysia (MoEM) on Development of a Teacher Education Model for Preparing Quality Teachers for the Future (2014 – 2018). It is to be noted that this NRGS research programme comprises of five projects namely Curriculum(Project 1), Teaching and Learning (Project 2), Assessment (Project 3), Educational Leadership (Project 4) and Clinical Experience and Induction (Project 5). The following sections describe the preliminary findings in the first phase of Project 1 (Curriculum), specifically on the development of guiding principles for a teacher education curriculum framework.

Developing guiding principles for a teacher education curriculum framework

Any teacher education is grounded in the curriculum of the programme. A teacher education curriculum would include the guiding principles for structure, content, teaching and learning, assessment, and clinical experiences. It will address the theoretical, practical, professional, personal and social dimensions of teacher education. The curriculum framework will try to frame the philosophy and guiding principles that will provide an appropriate basis for practice-oriented teacher education to meet the emerging challenges of the 21st century. In viewing teaching as inquiry, the curriculum framework will capture the complex, context-bound, active nature of teaching; and central to teaching as inquiry is the notion of teachers engaging simultaneously in practice and research, generating knowledge in and for their own contexts in the service of improved outcomes for learners. In other words, the curriculum framework will benchmark and validate the guiding principles for knowledge, skills and values of teachers on a continuum, spanning from initial teacher education to teacher induction.

In developing the guiding principles of a teacher education curriculum framework, the study attempted to fulfil two main objectives. Firstly, an analysis of the existing teacher education programmes in Malaysia, and several internationally recognized teacher education models or programmes in other countries in the context of policy, theory and practice. Secondly, to benchmark the profile of knowledge, skills and values that will form the foundations for constructing a new curriculum framework for preparing quality teachers for the future.

Methodology

Methodologically, a critical and comparative analysis of teacher education in Malaysia and selected international teacher education models and programmes from other countries such as Singapore, Finland, Netherlands, Hong Kong, Scotland, and United States were conducted from secondary sources such as reports, journal articles, chapters in books and books on teacher education. In addition, qualitative data were also obtained from individual interviews and roundtable discussions with 14 local critical informants comprising of educationists from both public and private universities, education officers from Ministry of Education Malaysia, teachers as well as external stakeholders from industry. The critical informants were mainly asked on their views on teacher education in Malaysia and the attributes of quality teachers. Provisional guiding principles of teacher education curriculum were then constructed.

As this research project is part of a larger study on Development of a Teacher Education Model for Preparing Quality Teachers for the Future (2014 – 2018) programme, the guiding principles from the other four projects, namely teaching and learning, assessment, teacher leadership, and clinical experience and induction were then consolidated and synthesized as core Provisional Guiding Principles (PGP) of a teacher education programme. Subsequently, a questionnaire, Guiding Principles of Teacher Education (GPTE-Q) was developed to gauge educational stakeholders' perceptions on the Provisional Guiding Principles of the research programme.

Findings and discussion

Various orientations to teacher education have been introduced and emphasised. The academic orientation, practical orientation, technical orientation, personal orientation and critical inquiry orientation are some of them (Zeichner, 1994). However, the practicability and effectiveness of any one of these orientations very much depends on the cultural orientation and professional socialisation of the context into which these orientations are introduced as innovations or reforms. Teacher education programmes throughout the world are based on national ideologies, policies and development plans. They are grounded in the culture of knowledge espoused by the major stakeholders (Bruner, 1996). The culture in turn is based on the value system espoused by the stakeholders concerned, and this value system is incorporated and reflected in the teacher education programmes, particularly its curriculum and the management and development of the curriculum.

Teacher education in Malaysia

In the case of Malaysia, a comprehensive critical analysis on the development of teacher education in Malaysia over three decades with specific focus on the efforts of the Teacher

Education Division and UPSI indicated alignment with the national ideology, policies and developmental plans. Teacher education in Malaysia attempts to cater to the value system, skills and knowledge as spelt out in the Philosophy of Teacher Education, 1982, National Philosophy of Education, 1996, Malaysian Teacher Standards, and the emerging demands of the new knowledge era and beyond as stated in several government policies and development plans such as Five-year Malaysia Plan and Vision 2020.

The Malaysia Education Blueprint (2013 –2025) has identified 11 shifts to transform the education system. Out of these 11 shifts, it is the fourth shift on transforming teaching into the profession of choice that has direct relevance to this research project. This shift aims to raise the entry bar for teachers from 2013 to be amongst top 30% of graduates; revamp the IPG to world class standards by 2020; upgrade the quality of continuous professional development (CPD) from 2013; focus on teachers on their core function of teaching from 2013; implement competency and performance-based career progression by 2016; enhance pathways for teachers into leadership, master teaching and subject specialist roles by 2016; and develop a peer-led culture of excellence and certification process by 2025. The educational transformation as outlined in the Education Blueprint would have implications to teacher education for as said by the Deputy Prime Minister cum Minister of Education,

This Government is committed to transforming Malaysia's education system over the next one-and-a-half decades. Our goal, and the purpose of the education system, is to equip our students holistically to allow them to succeed in the 21st century, with all of the opportunities and challenges that this new era presents. In order to compete with the best in the world, our education system must develop young Malaysians who are knowledgeable, think critically and creatively, have leadership skills and are able to communicate with the rest of the world. Just as importantly, our students must be imbued with values, ethics and a sense of nationhood, enabling them to make the right choices for themselves, their families and the country with a view towards enduring and overcoming life's inevitable challenges. (Muhyiddin in Ministry of Education Malaysia, 2013)

Teacher education in other countries

A literature review on the teacher education programmes in selected countries such as Singapore, Finland, Scotland and Netherlands as well as world reports such as World Bank Report on *Learning to Teach in The Knowledge Society*, 2005, and research, for example by Darling-Hammond and MacDonald (2000) indicates some salient characteristics in terms of policy, curriculum, and teaching and learning. The policy aspects relate to overall teacher education policy, recruitment and selection, programme structure, and quality. The category on curriculum includes aspects on programme structure, curriculum approach, stakeholders' involvement, and quality of teachers. Teaching and learning category include aspects on structure and nature of practicum.

The Singapore's 21st century teacher education model, known as New Values³, Skills and Knowledge (V³SK) Model, consists of six key elements which include the underpinning philosophy, curriculum, desired outcomes of the teachers and academic pathways. The model provides the collaborative framework of shared values and goals in the interest of teacher learning and education research, while recognizing the need for mutual respect for each partner's roles, beliefs, perspectives, experiences, expertise and

knowledge. In the case of Netherlands, the teacher education framework emphasises on teacher competences including ICT competency, generic knowledge base and competency in content knowledge, pedagogical (didactical) content knowledge and pedagogical knowledge (didactics). Finland's teacher education model is in preparing teachers for a research-based profession (Westbury et al, 2003). It focus is on equity and well-funded schools for all kids. Finland emphasizes teacher collaboration, not competition, and has policies to insure that all teachers are highly qualified and well trained.

According to the World Bank Report on *Learning to Teach in the Knowledge Society*, (2005) the critical analysis of the existing literature is consistent when affirming that the initial teacher education has many difficulties to overcome the preconceptions and beliefs that the students bring when they begin their studies to become a teacher. Those beliefs and preconceptions are generic (on the teaching in general, the students, the classroom) as specific of the contents that become trained (scientific misconceptions). To modify those preconceptions, as well as to form the teacher in an understanding domain of the matter that they will teacher education is required to integrate appropriately different types of knowledge that are generally presented separately.

The critical analysis has demonstrated the importance of the pedagogical content knowledge like the crucial, eminently professional element that characterizes the teaching. That type of knowledge is acquired when the teachers integrate the content to teach with the form of teaching it and assisting to the characteristics of the students. It is a type of knowledge that is generally missing in the curriculum of teacher education. The research on learning to teach shows clearly that the initial teacher education is necessary to contribute to develop in the future teacher a deep knowledge of the subject matter that they teach, as well as the conceptual tools for the transformation of that knowledge in pedagogical content knowledge to diverse students. Initial teacher education should incorporate pedagogic components that contribute to an appropriate integration among the theoretical and applied knowledge (Moreno, 2005:26). Moreno (2005) also argued that a contextualized (situated) knowledge requires training scenarios around cases, simulations and problems that can be derived of the practical experiences of classroom. He further added that research has also shown that teacher knowledge of subject matter, student learning and developments, and teaching methods, along with skills developed through expert guidance in clinical settings, are important elements of teaching effectiveness.

Darling-Hammond and MacDonald's (2000) comparative analysis on seven North American teacher-training programmes revealed certain identifying effective elements. These elements are summarized as conceptual coherence that provides a guiding view about the type of teacher being trained, a view of learning, of the role of the teacher and the school, and includes the values and beliefs that will later be seen in the curriculum and in the learning opportunities for the students during practice; integrated teaching practice in which observations, orientation, guided practice, application of knowledge and investigation are essential; attention to teachers as subjects who learn; greater involvement of and integration between the various types of knowledge needed for learning to teach, addressing teachers' pre-existing knowledge and beliefs about teaching, learning, and subject matter; providing teachers with sustained opportunities to deepen and expand their knowledge of subject matter that is novice must have the opportunity to strengthen their subject matter knowledge and pedagogical content knowledge throughout the teacher education experience; treating teachers as learners;

grounding teachers' learning and reflection in classroom practice; and offering ample time and support for reflection, collaboration, and continued learning.

Provisional curriculum framework for teacher education

Based on the analysis of the teacher education programmes in Malaysia and other countries, it is argued that the fundamental issue is school students can hardly be expected to acquire these 21st Century competencies if the teachers in charge of their education simply do not have them and a curriculum framework for teacher education needs to address this basic issue in teacher education for as said,

The issue of teaching competencies beyond or across different knowledge areas and disciplines becomes a critical one in the context of the overall consensus around the 21st century competencies. At the macro level, what teachers should know and be able to do continue to be country-specific, although it appears to be increasingly shaped by world trends.(Moreno,2005:39)

The comparative and critical analysis of teacher education in Malaysia and other countries indicated that a teacher education curriculum structure is integrated and emergent in nature, having thinking as its core in the following aspects: facilitating the development of the intellect, learning to learn, knowledge production; meta-cognition, decision making, creativity, problem solving and problem based learning. The selection of curriculum content is to contribute to the process of in-depth learning through thinking and act as the vehicle for developing thinking processes that are to be situated in real-world tasks. The curriculum should be able to nurture knowledgeable, self-determinant, strategic and empathetic learners with critical, creative and caring thinking be infused throughout the curriculum and represented within a wide variety of course descriptions. Most importantly, the curriculum and its purposes must be shared with each teacher education candidate.

The study also found that a curriculum framework of teacher education would encompass a basic teacher education philosophy and aims that frame the qualities desired in teacher education, while the dimensions describe the characteristics of a teacher education programme. The dimensions identified in this study comprise of professional dimension which include education foundation, professional practice, school subject content, educational electives, education specialization, and clinical experience, internship and induction; contextual dimension which include education context, global context, varying school context; and personal dimension which include individual worth, individual dignity, ethical, moral, spiritual, aesthetical values, self-fulfillment, self-actualisation, commitment, resilient and sustainability. It is based on this provisional curriculum framework that provisional guiding principles and its attributes of values, skills and knowledge are constructed.

Provisional Guiding Principles in Developing Teacher Education Model

As earlier explained in this paper, this research project is part of a larger study on Development of a Teacher Education Model for Preparing Quality Teachers for the Future (2014 – 2018) programme comprising of five project namely Curriculum (Project 1), Teaching and Learning (Project 2), Assessment (Project 3), Educational Leadership (Project 4) and Clinical Experience and Induction (Project 5)., As such the 35 guiding

principles from all five project were consolidated and synthesized to form common Provisional Guiding Principles (PGP). The curriculum project group proposed ten PGP, the teaching and learning project group proposed six PGP, assessment group proposed seven PGP, the teacher leadership group proposed six PGPs, and the clinical experience and induction group proposed six PGP. The researchers from the five project groups held discussions and subsequently agreed in consensus to eight PGP and its attributes of values, skills and knowledge. As the eight PGP of the programme are based on the PGP of the 5 projects, it is acknowledged that at this provisional stage there are some similarities and differences in the attributes in the PGP due to differences in the focus of the PGP and of the different projects.

The eight Provisional Guiding Principles (PGP) of a teacher educational model are as follows:

1. Teacher education develops teachers who are able to critically examine, appreciate and practice the educational values of the teaching profession in the national and global context.
2. Teacher education develops teachers who are able to explore and create knowledge independently.
3. Teaching, learning, assessment, leadership and clinical experiences are multidimensional, integrated, and reflective.
4. The teaching-learning environment provides scope and opportunities to foster intellectual excitement that will optimise learners' potentials and passion for life long learning.
5. Provides quality learning space, resources and technologies for learners to engage in active and cooperative learning that promote positive social interactions and self-fulfillment.
6. Develop competency to adapt to changing technology and its application in educational practices.
7. Develop learners as educational leaders with the attitude and capability to provide ideas, innovations and manage change through evidence-based practices.
8. Foster continual outreach programmes and networking with local and global communities to provide a sense of belonging and responsibility.

In order to obtain preliminary feedback on the relevance and accurate measurement of the eight PGP, a Guiding Principles on Teacher Education Questionnaire (GPTE-Q) was constructed. The preliminary GPTE – Q consisted of 58 items covering aspects of curriculum, teaching and learning, assessment, teacher leadership and also clinical experiences & induction. The sample consisted of 161 respondents, namely 16 education officers from the Ministry of Education, 15 academicians from public and private universities, and 130 teachers throughout Malaysia. Exploratory Factor Analysis (EFA) and reliability analysis were conducted. Two indicators were tested for sample appropriateness for such an analysis. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy index was 0.74, and Bartlett's Test of Sphericity was significant $\chi^2 = 1877.14$, $p < 0.0001$, indicating that the sample and correlation matrix were within an acceptable range for the analysis. The EFA was then used to assess fit, detect possible factor structure and eliminate non-fitting items. Questionnaire soundness was examined using principal components factor analysis with varimax rotation. The scree plot test and the acceptance of eigen values greater than one were used to identify the number of factors likely to be extracted. A factor loading of 0.50 was used as the cut off point for variable acceptance. Eight factors emerged with eigen values greater than one,

accounting for 65.9 per cent of the variance in the respondents' scores. Rotation converged after 23 iterations. The eight factors accounted for 37.5 per cent of variance in the respondents. Reliabilities (α) for each of the factors were 0.91 for both PGP1 and PGP2, 0.92 for PGP3, 0.86 for PGP4 and PGP5, 0.85 for PGP6, 0.89 for PGP7 and 0.86 for PGP8. The eight-factor solution seemed both parsimonious and provided a better interpretation of teacher educator's awareness of the principles attached for optimum teacher education.

Qualitative data on the overall eight PGP were also obtained from local experts in education and stakeholders including teacher educators from universities and IPG, Ministry of Education, teachers, former educational directors at a round-table discussion. They generally agreed to the eight PGP and suggested that the ordering of the attributes in terms of importance should firstly be on values, followed by skills and then knowledge. The PGP and its attributes on values, skills and knowledge were then subsequently accepted at this phase of the study.

Conclusions

As this study is a process-based research over a period of five years, the findings of this first phase have identified the problems and constraints that have implications to the subsequent phases of the study in developing and validating a curriculum framework for a teacher education model for quality teachers of the future. Although the eight PGP were found to be acceptable at this preliminary study, the PGP need to be further refined and validated so provide a template for reviewing existing framework and formulating a teacher education model as an outcome of this research programme.

Reforming a system entails attempts to change the status quo, driven by a disquiet that the system needs to be somewhere else, not where it currently is. Reforming a system thus entails attempts to move from point A, where the system currently is, to point B, the cherished place identified. For the Malaysian education system, the disquiet about its state has been felt for quite a while. A number of signs triggered this feeling. Going by the Malaysian Education Blueprint, a few major ones were identified. Of these, three that seemed to draw more attention and gain greater traction were: (i) the standards were not up to international markers as judged by the performance of Malaysian students in international assessment; (ii) students' school experience was perceived to be out of sync with the rigour of living and working in the 21st century; and (iii) disturbing gaps in education outcomes between different sections of Malaysian population. Obviously, where the Malaysian education system wants to be is where these unwanted signs no longer exist. It was against this background that the move to reform teacher education in Malaysia was made. It was a reactive, not a proactive move.

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