

A Teacher Education Model for the 21st Century (TE21)

A Report by the National Institute of Education, Singapore



Executive Summary

NIE as a university-based teacher education institution has a strong foundation in terms of the structure and substance of its teacher education programmes. Like many high-performing teacher education providers in the world, NIE's model provides the crucial theoretical foundation necessary to produce the “thinking teacher”, whilst concurrently leveraging on strong partnerships with key stakeholders and the schools to ensure strong grounding in clinical practice and the realities of developing professionalism. Our strength also lies in providing a solid base in subject matter and pedagogical content knowledge, as well as a strong connection to educational research. The adoption of the university-based model demonstrates that teaching is a profession where the development of teachers is underpinned by evidenced-based learning, and where teachers require the award of a degree as a pre-requisite for joining the profession.

Previous reviews have affirmed both the structure and substance of NIE's teacher education programmes. In the light of changing needs in Singapore's education system and developments in the global educational landscape, this current review builds on existing strengths to bring teacher education onto a higher plane of excellence, drawing on the perspectives of stakeholders and putting the 21st century learner at the very heart of our educational goals. *21st century learners call for 21st century teachers*' is the impetus for the Programme Review and Enhancement (PRE) 2008-2009. Based on extensive literature review, understanding of existing and emerging trends, local profile, changing landscape in policies and initiatives, and research data, we explored possible and viable avenues for enhancements – the culmination of these efforts is a new **Model of Teacher Education for the 21st century (TE²¹)** at NIE .

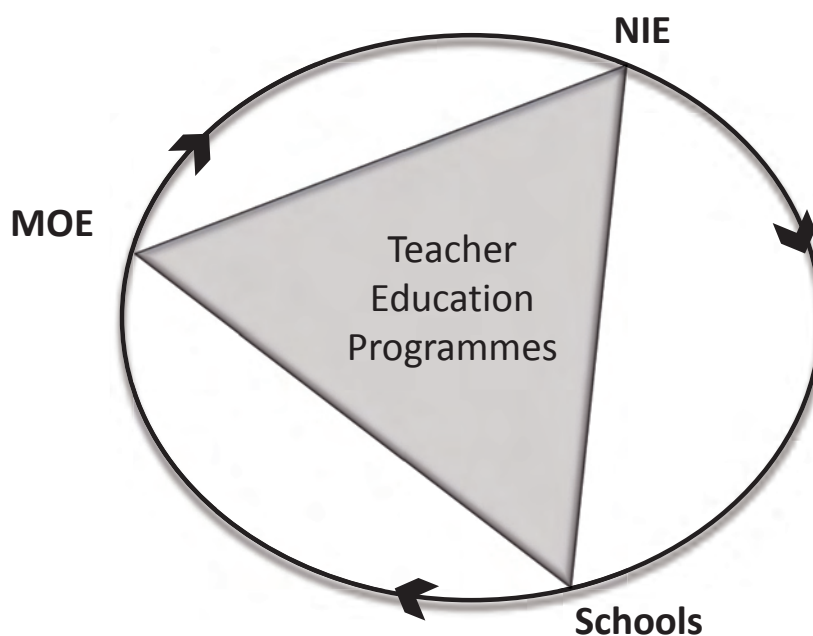
The NIE TE²¹ is a transformative endeavour that will guide the design, delivery and evaluation of NIE's programmes in order to provide the best education to our aspiring and serving teachers to become 21st century teaching professionals. It is a key initiative under the teaching strategy of the NIE 3:3:3 Roadmap (the 5-Year Strategic Plan 2007 – 2012) and a concrete response to the educational challenges brought forth by the current global landscape as well as anticipated future needs. Thus far, 21st century has been characterised by knowledge-driven economies, rapid information exchanges and fast-moving communication technologies which have created new demands on education systems worldwide. In the 21st century landscape, education must focus on nurturing the whole child – morally, intellectually, physically, socially and aesthetically. Students need to acquire new knowledge, skills and dispositions to ensure their survival and success as individuals, as members of the community, and as citizens of our nation. To achieve this, we must develop teachers who are able to undertake greater responsibilities as they are at the forefront of educating our youth. It is now universally accepted that the quality of the teaching force determines the quality of education. As we raise the standards for our children, our 21st century teachers will also need the right values, skills and knowledge to be effective practitioners who will bring about the desired outcomes of education.

Enhanced Partnership with MOE and Schools

The robust partnership between NIE, MOE and schools is a key driver of NIE's internationally recognized teacher education programmes. To strengthen the tripartite relationship along the whole continuum and reinforce the theory-practice nexus, NIE advocates an "Enhanced Partnership Model" to leverage on the proven strengths of NIE's university-based approach while emphasizing much closer collaboration with MOE and schools than what currently exists.

The commitment from all key stakeholders – NIE, MOE and schools is required in transforming teacher education to produce 21st century teachers. The Enhanced Partnership Model is one of the key levers that will determine the successful implementation of the proposed TE²¹ recommendations. This model provides the collaborative framework of shared values and goals in the interest of teacher learning and education research, while recognising the need for mutual respect for each partner's roles, beliefs, perspectives, experiences, expertise and knowledge. The enhanced partnership between NIE and schools is particularly significant in strengthening the theory-practice nexus. Together with MOE, a strong tripartite relationship will promote solidarity of intentions and efforts to provide teachers with the best support for their work in 21st century classrooms.

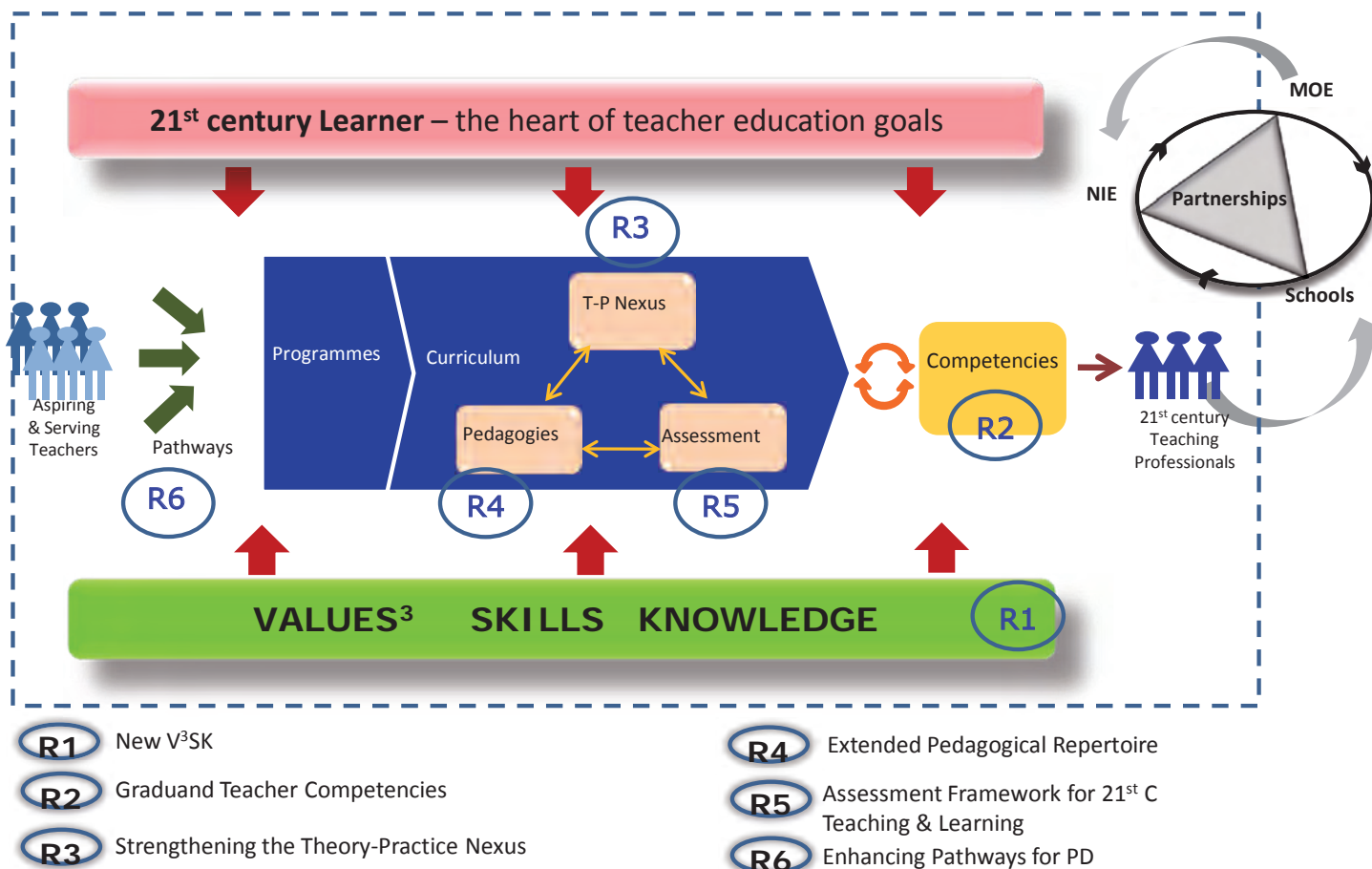
Figure 1: Enhanced Partnership Model



TE²¹: Towards a strong teaching force for the 21st century

The new TE²¹ Model puts forward 6 broad recommendations (R1 to R6 referred to below) that are intended to enhance the key elements of teacher education, including the underpinning philosophy, curriculum, desired outcomes for our teachers, and academic pathways. (Figure 2) These enhancements reflect a holistic approach to strengthening teacher education at NIE across the continuum, from ITP to TPD in a manner that is current, relevant and responsive in meeting the needs of our schools.

Figure 2 : NIE Teacher Education Model and the 6 key recommendations



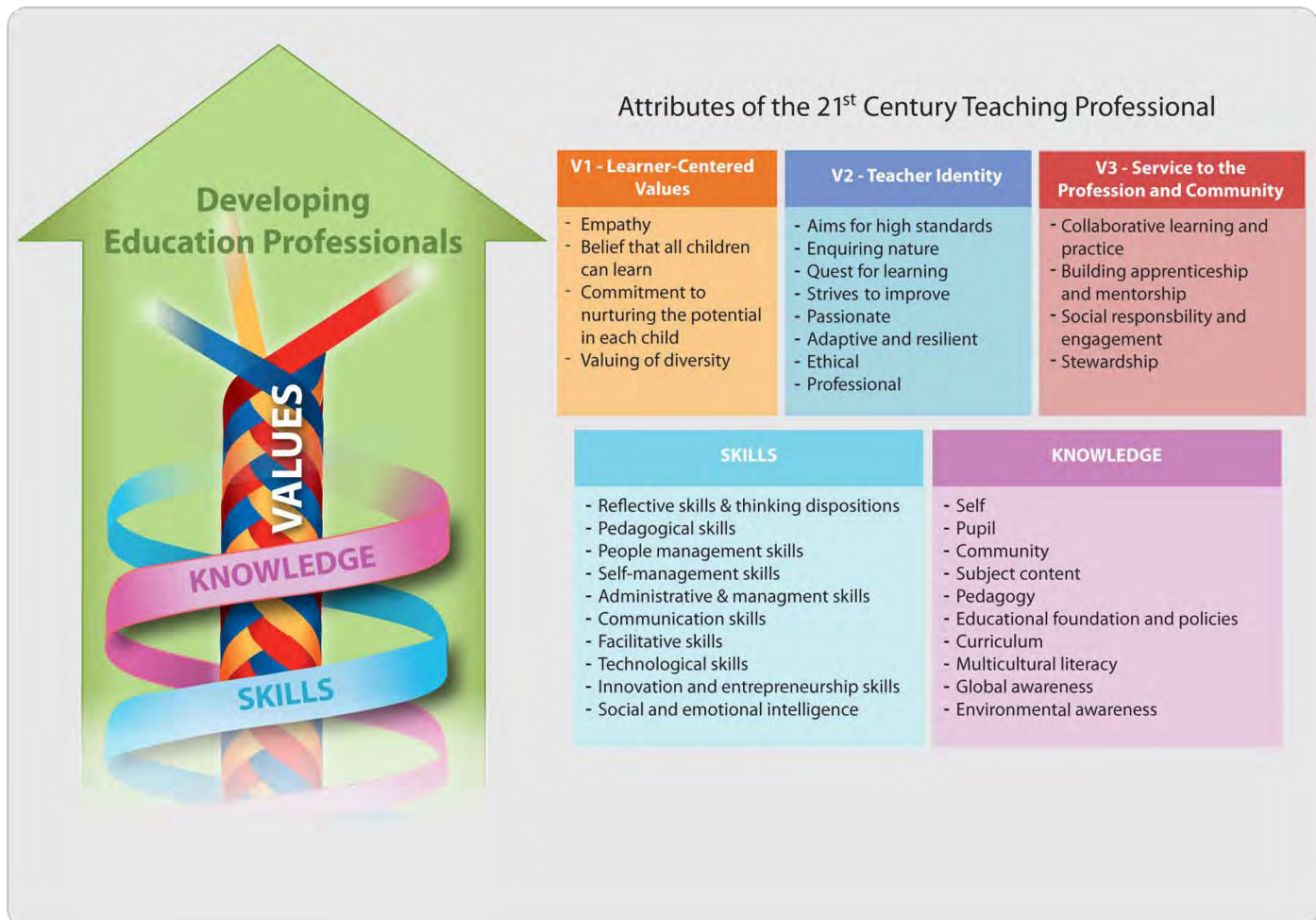
R1: New Values³ (V) Skills (S) and Knowledge (K) Model

The V³SK represents the underpinning philosophy of teacher education at NIE. It guides the design, delivery, and enhancement of NIE’s programmes and courses, to develop teachers who possess the positive attitudes, necessary skills, depth and breadth of content knowledge. (Figure 3) These are the essential prerequisites in meeting the challenges of the 21st century classroom. The V³SK model focuses on three value paradigms: (i) Learner-centred; (ii) Teacher Identity; and (iii) Service to the Profession and Community.

- **Learner-centred values** puts the learner at the centre of teachers’ work by being aware of learner development and diversity, believing that all youths can learn, caring for the learner, striving for scholarship in content teaching, knowing how people learn best, and learning to design the best learning environment possible.
- **Teacher identity values** refer to having high standards and strong drive to learn in view of the rapid changes in the education milieu, to be responsive to student needs.
- **The values of service to the profession and community** focuses on teachers’ commitment to their profession through active collaborations and striving to become better practitioners to benefit the teaching community.

The V³SK model also underscores the requisite knowledge and skills that teachers must possess in light of the latest global trends, and to improve student outcomes.

Figure 3 : The new V³SK Model



R2: Graduan Teacher Competencies (GTC) Framework

The GTC Framework articulates a set of professional standards, benchmarks and goals for NIE graduands. It also provides a framework for 21st century teacher skills and represents a holistic integration of the new V³SK model and the MOE competencies framework for beginning teachers, using the three performance dimensions – **professional practice, leadership & management and personal effectiveness**. (Figure 4). By aligning the GTCs with the professional standards set by MOE, a common language will be established and graduands will continue to develop these competencies beyond ITP. The GTCF will be embedded in NIE’s programmes and courses, and will also be used in evaluating student teacher outcomes. It provides mentors with a good developmental framework to work with, and student teachers with a common baseline to work towards. It also serves as a scaffold that supports student teachers’ growth and development. Finally, the framework provides clear expectations for stakeholders in terms of the competencies of NIE graduands.

Figure 4 : The Graduand Teacher Competency Framework

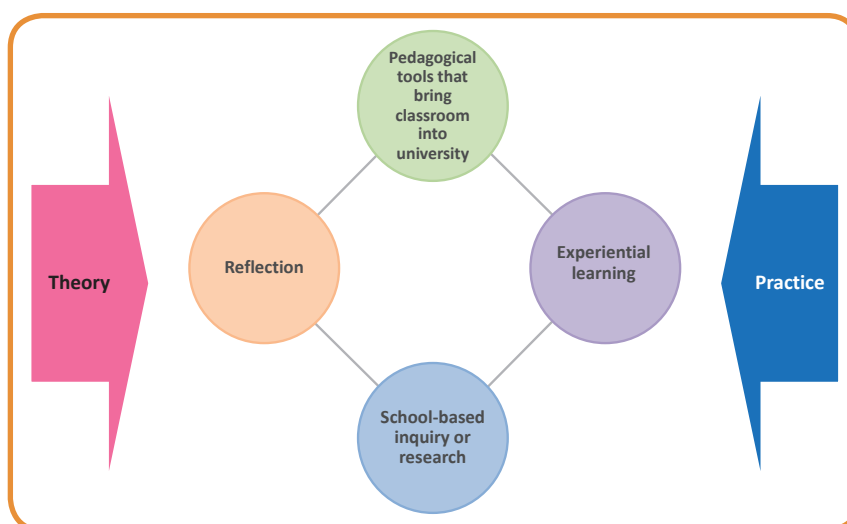
Organisation of the GTCs

Performance Dimensions	Core Competencies
Professional Practice	<ol style="list-style-type: none"> 1. Nurturing the child CB 2. Providing quality learning of child CB 3. Providing quality learning of child in CCA CB 4. Cultivating knowledge: <ol style="list-style-type: none"> i. with subject mastery CB ii. with reflective thinking CB iii. with analytic thinking CB iv. with initiative A v. with creative teaching A vi. with a future focus A
Leadership & Management	<ol style="list-style-type: none"> 1. Winning hearts & minds <ol style="list-style-type: none"> i. Understanding the environment A ii. Developing others A 2. Working with others <ol style="list-style-type: none"> i. Partnering parents A ii. Working in teams CB
Personal Effectiveness	<ol style="list-style-type: none"> 1. Knowing self and others <ol style="list-style-type: none"> i. Tuning into self CB ii. Exercising personal integrity A iii. Understanding and respecting others CB iv. Resilience and adaptability CB

R3: Strengthening the Theory-Practice Nexus

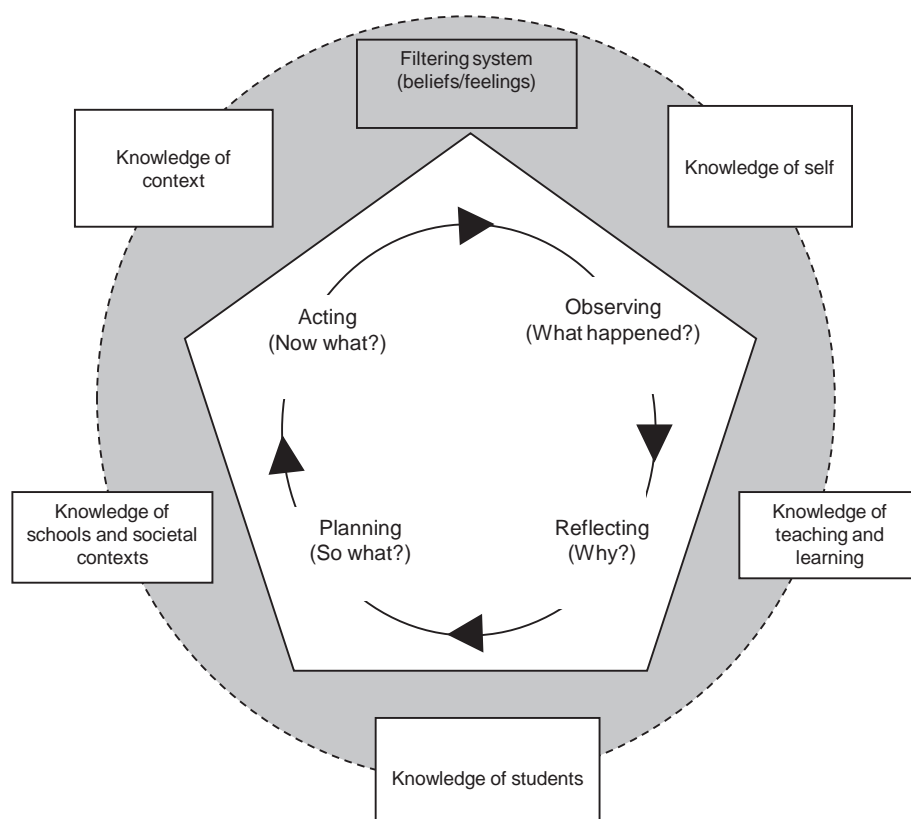
The theory-practice (T-P) gap is widely accepted as a prevalent shortcoming of teacher education programmes. There is a need to achieve balance between theoretical knowledge and practice-based learning. A strengthened T-P nexus in teacher education programmes allows teachers to leverage on both types of knowledge to effectively transition in the schools. The more common approaches of bridging this gap are reflection, experiential learning, school-based research or inquiry projects and pedagogical tools that bring the classroom into the university. (Figure 5) Given these approaches, NIE will undertake a number of initiatives to further strengthen the T-P relationship in its programmes:

Figure 5 : Strengthening the Theory-Practice Nexus



- The mentorship process will be strengthened, particularly in practicum and beyond, and by greater infusion of NIE-school interactions. Mentorship in both the ITP and BT induction period will be reinforced by establishing a Structured Mentorship Preparation Programme to equip School Coordinating Mentors (SCMs) and prepare them for their enhanced roles and responsibilities. The programme will take a developmental approach with Basic, Intermediate and Advanced levels.
- The practicum will be strengthened by enhancing the current role of the SCMs before, during and after the practicum and to ensure a continuum of mentorship from practicum to the beginning teacher induction period. Professional Learning Inquiry Sessions (PLIS) to be led by SCMs will be introduced as a component of the practicum.
- NIE-School interactions will be infused in NIE's programmes on the basis of the four common approaches of bridging the T-P gap – reflection in action, school-based inquiry or research, using pedagogical tools to create a 'simulated' school environment and experiential learning. The interactions will be done in a more systematic and meaningful manner at both the course and programme levels.
- NIE will explore with MOE the secondment of practitioners from schools to NIE, especially those who have potential to be SCMs. They will be attached to NIE to teach ITP and TPD courses as part of their professional development.
- The Enhanced School Experience for PGDE should ideally be structured to allow student teachers to fully benefit from it. The ESE will provide student teachers with an induction to the school culture and environment, opportunities to observe experienced teachers and to co-teach, as well as provide a structure for observing and reflecting on these experiences. These activities would optimise the time spent in schools with key takeaways that would directly benefit them during the course of the programme in NIE.
- The Reflective Teaching Model (Figure 6) will be used to provide a common framework to help teachers consolidate their experiences and guide them in systematically reflecting on their practices. SCMs will also be exposed to the model which can be used during PLIS and the new Portfolio assessment approach.

Figure 6 : The Reflective Teaching Model



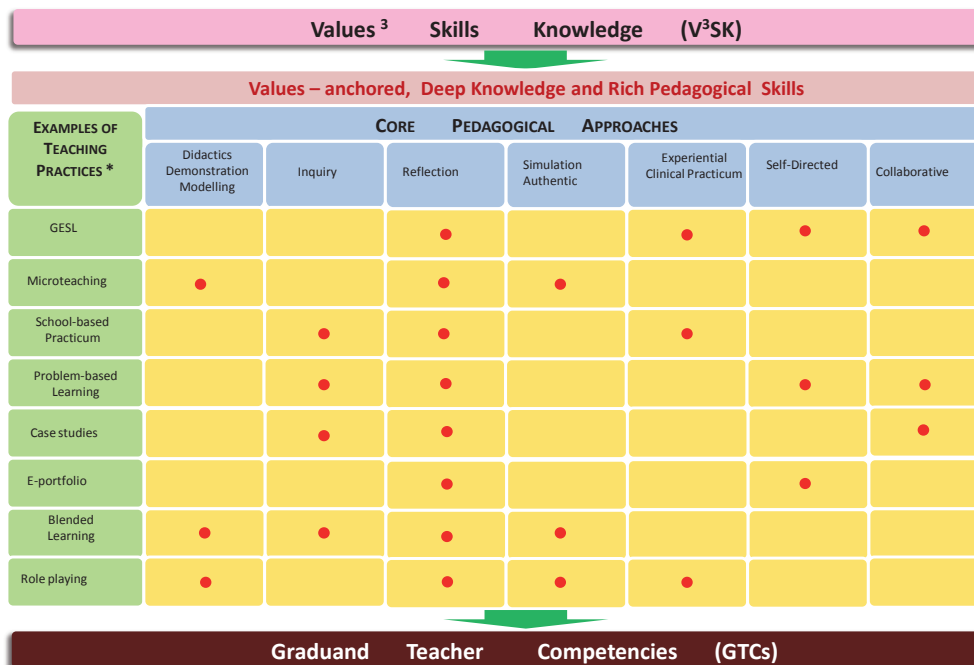
A new phase of partnership between NIE, MOE and schools is timely as the Teaching Track has made significant advancement in recent years, and a sizeable number of Senior Teachers and Masters Teachers have been appointed and trained. Riding on the crest of this more mature system, schools are in a good position to take on a bigger, more active role in the mentoring of student teachers before, during and after practicum, and beginning teachers during the induction period. This transformation will call for a new customized mentor training programme, and refinement of the practicum process with the introduction of PLIS. There will be deeper engagement of professional practice involving SCMs, and greater emphasis on reflective teaching.

R4: Programme Refinements and An Extended Pedagogical Repertoire

It is acknowledged that teacher education programmes need dynamic development to reinforce and refresh core content. Therefore a mechanism for greater sharing and articulation needs to be put in place. There is also an increased recognition of the changing nature of content – in terms of accessibility, advancement and conditions for bringing about new learning. Hence programmatic changes will be incorporated where relevant. At the same time, pedagogies and assessments need to change given the changing nature of knowledge, learning, profile of learners and the new environment.

NIE will establish a strategy and framework for Pedagogies to ensure that appropriate and effective pedagogies are used in the curriculum, with the objective of equipping teachers with the range of instructional strategies needed for classroom teaching (Figure 7).

Figure 7 : Mapping the Pedagogical Repertoire



In modelling best practices for teachers to translate into classroom practices, NIE will also ensure that effective pedagogies are scaled up across the institute, and will invest in creating teaching facilities that support pedagogical approaches which achieve the desired teaching and learning outcomes.

NIE has embarked on creating teaching facilities that are in line with the current trends in school classroom design to support pedagogical practices that will help achieve the desired teaching and learning outcomes

- **Primary English Language (PEL) Classroom**



The PEL Classroom exemplifies for our student teachers what an engaging learning environment for primary school children should and can be. It is purposefully cheerful and welcoming to ensure that the students enjoy the process of learning. Immersion in rich print is critical for early literacy, so the room has a large collection of big, small and audio books, children's writing, posters and labels. Environmental prints (such as signs and directions) remind children that language is functional. Children learn to read from big books, and read to learn from the learning centres of Mathematics and Science, which are arranged to integrate seamlessly with English.

A smart board demonstrates the use of current technologies that can be useful in the teaching of reading and writing, where processes can be made explicit and visible as the teacher analyses and constructs texts for the class. A platform complete with a simulated "Recording in progress" red light offers an authentic context for show-and-tell and other oral activities, while wireless headsets take the traditional "listening station" to a new level, allowing children to listen to and engage with audio-texts anywhere in the classroom.

The PEL is both a "model" classroom and a resource room for teachers. It displays various teaching tools and props such as different types of easels and colourful puppets (hand, glove, finger, 3-in-1) against the backdrop of different types of puppet theatres. Each teaching resource in the room is there to illustrate a pedagogical principle. Even the frog that greets you as you enter and leave the room has been strategically placed to teach onomatopoeia as it greets you with a "croak".

• Teachers' Language Development Centre (TLDC)



The aim of the Teachers' Language Development Centre's new English Language Self-Access Centre (SAC) is to encourage student teachers to take an active role in improving their English Language skills through independent self-learning and peer-to-peer learning. The SAC's design concept is that of a flexible and functional learning space, where form and design complement each other, and where technology is seamlessly integrated into all aspects of the centre — recessed power outlet panels in the carpeted floor, interconnected flat-screen display

monitors, self-access libraries of both print and media reference materials, as well as wireless internet access create a purposeful learning environment that supports a range of mobile and digital learning technologies.

The space is divided into a number of different areas that support various facets of independent learning of language skills. The central area, which has a high-definition overhead screen projector, can be used for lectures, screening of movies, or teacher-led interactions. The concept of a lounge area with flexible seating also enables student teachers to engage in informal small-group discussions. At one corner of the SAC, sound-isolated facilities are available for students to individually practise their pronunciation – these are equipped with computers pre-loaded with specialized software for oral language practice. Along with SAC's creative and innovative use of space and technology is its equally important use of vibrant and youthful colours and design motifs that together create an inviting learning environment.

• Collaborative Tutorial Rooms

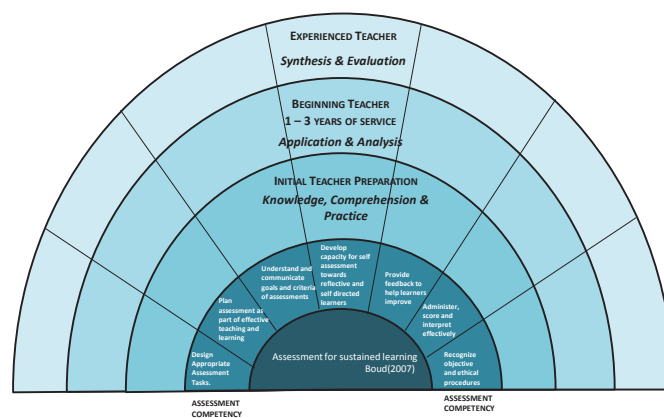


The new Collaborative Tutorial Rooms parallel the classrooms found in some schools. They are designed with learning spaces that allows student teachers to conduct collaborative activities. While there is extensive use of learning tools which are technology-driven, there is also an attempt to maintain an atmosphere which is conducive for class-wide discussion and sharing.

R5: Assessment Framework for 21st Century Teaching and Learning

Enhancements to assessment practices will complement the range of pedagogies to be adopted in NIE. The establishment of an Assessment Framework for teaching and learning will address the need for producing teachers who have high assessment literacies and who are able to adopt the best practices in the classroom to effectively evaluate student outcomes. (Figure 8) Under this framework, key processes that will enable both NIE educators and teachers to adopt innovative assessment practices both of and for learning will be identified and scaled up.

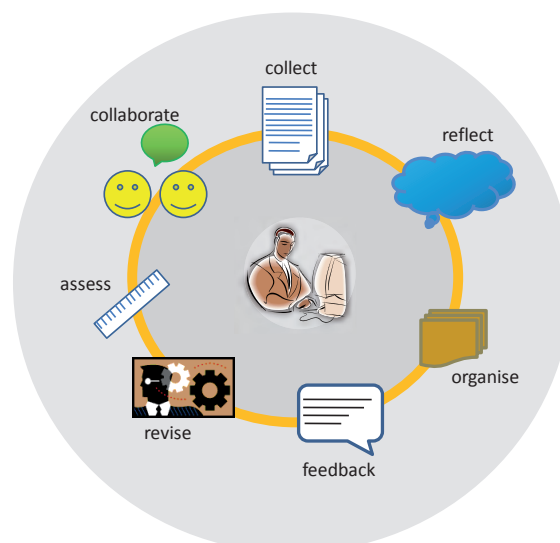
Figure 8 : Assessment Framework



A defined set of assessment literacy outcomes to be developed will consist of key elements of assessment competencies for effective teaching and learning in school. By specifying entry-level requirements, the framework supports the concept of learning as a continuum that begins in an ITP setting and continues with life-long professional education and experience.

The introduction of e-portfolios (Figure 9) is a move in a new direction and approach to the assessment and validation of graduates' achievement of the GTCs, and is aimed at developing the reflective teacher. For ITP, the assessment focuses on the development of student teachers from the start of their candidature in NIE through to the end of the practicum. For TPD, a professional portfolio will be one of the key components of assessment for the Professional Inquiry Project, which is a graduation requirement for the new Master of Teaching degree.

Figure 9 : E- Portfolio process



R6: Enhanced Pathways for Professional Development

To attract the best and brightest to make teaching a profession of choice, the stature and professionalism of teachers will need to be improved. To this end, two new academic learning pathways are being proposed to enable highly qualified student teachers to obtain a Master's degree within a shorter timeframe.

NIE is recommending a staged approach for the implementation of the following pathways:

- 2-year full time PGDE-Master's programme (Figure 10)
- 4+1 accelerated Bachelor-Master's programme for the top 10% of the cohort (Figure 11)

Figure 10 : 2-Year full-time Master's programme with a PGDE exit option

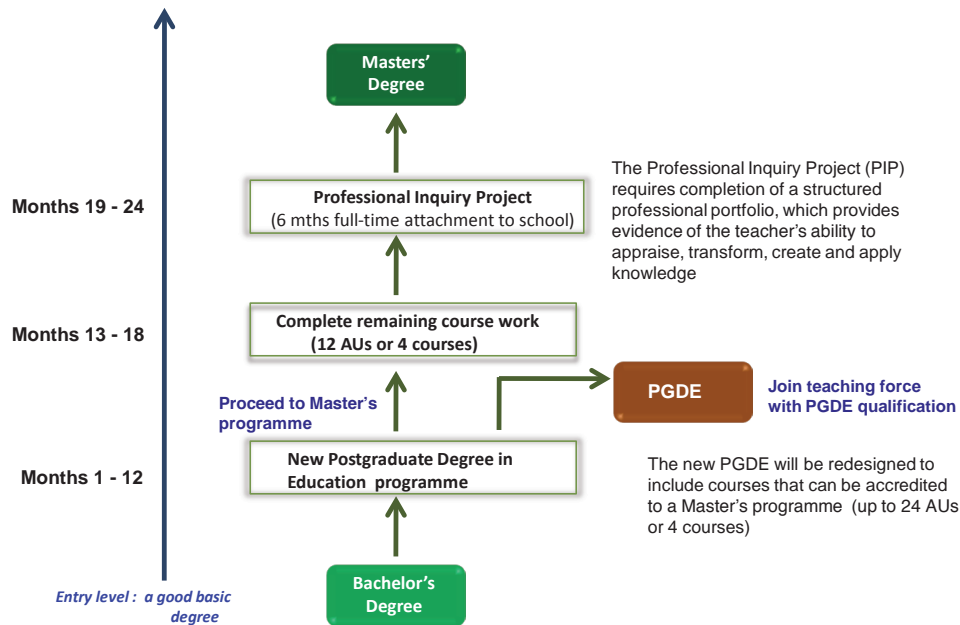
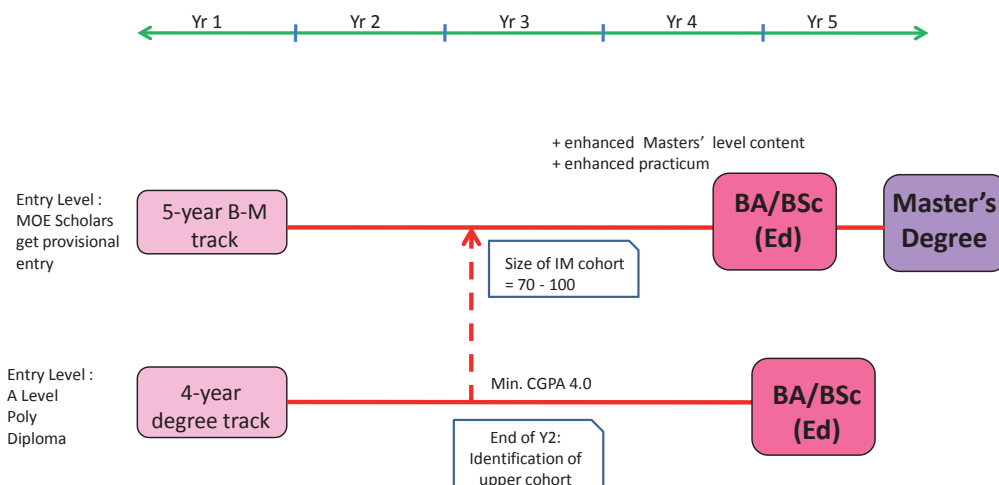


Figure 10 : 2-Year full-time Master's programme with a PGDE exit option



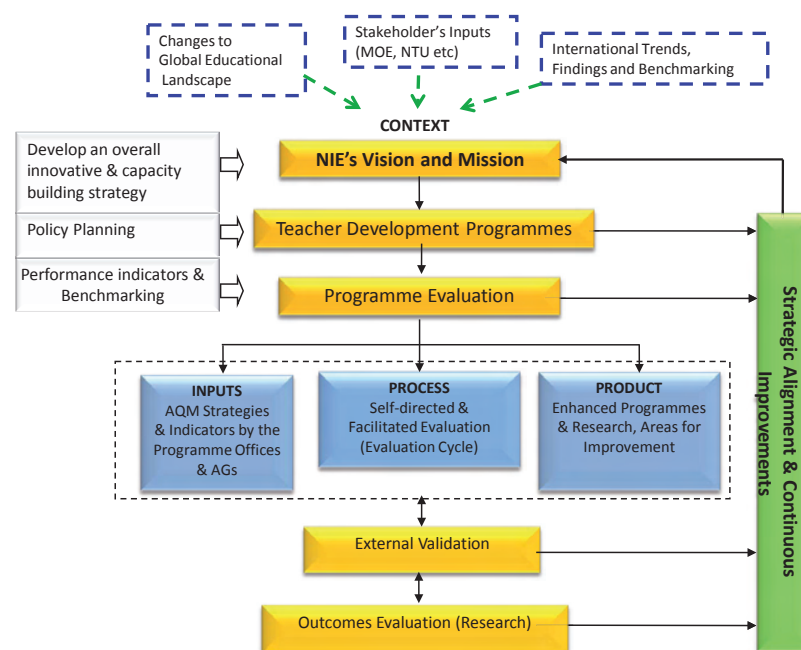
Transforming for the 21st century – *Walking the Talk*

The success of NIE TE²¹ Model ultimately lies in the effective implementation of the recommendations put forward and the sustainable impact of any programme innovations and new developments in curriculum, pedagogies, and assessment. To gear up for the transformation process ahead, NIE as a community has to turn inwards and reflect on the necessary change of mindsets, approaches, systems and technologies that are required to turn best intentions into action, and achieve a concerted synergy of excellence across the institute. This institutional change has to be achieved through the following initiatives:

- Evidence-based, research-informed improvements to teaching and learning
- Academic Quality Management (Figure 12)
- Faculty professional development
- Infrastructure and systems to support learning

This transformative endeavour where 21st Century teachers call for 21st Century teacher educators requires strong reserves of self belief and supported by the appropriate resources to reach the destination 2012 as mapped out by the 3:3:3 Roadmap.

Figure 12 : Academic Quality Management Framework



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