



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

NIE's journey from concept to realisation

An Implementation Report

*Two roads diverged in a wood, and I—
I took the one less traveled by,
And that has made all the difference.*

The Road Not Taken
Robert Frost (1874 – 1963)

Acronyms

| | | | |
|--------|---|-------------------|--|
| ACF | Assessment Competency Framework | JC | Junior College |
| AGs | Academic Groups | LEADS | Language Enhancement and Academic Discourse |
| APT | Assessment of Performance in Teaching | LSL | Learning Sciences Laboratory |
| AS | Academic Studies | MOE | Ministry of Education |
| CeL | Centre for eLearning | NIE | National Institute of Education, Singapore |
| CPDD | Curriculum Planning and Development Division | OER | Office of Education Research |
| CRPP | Centre for Research in Pedagogy & Practice | PGDE | Postgraduate Diploma in Education |
| CS | Curriculum Studies | PLIS | Professional Inquiry Learning Sessions |
| CT | Co-ordinating Teacher | PRE | Programme Review and Enhancement |
| Dip Ed | Diploma in Education | Pri | Primary |
| EPD | Educational Programmes Division | ReEd | Research in Education |
| ES | Education Studies | SCM | School Coordinating Mentor |
| ETD | Educational Technology Division | Sec | Secondary |
| FC | Focused Conversations | SK | Subject Knowledge |
| GC3 | Graduate Commitments, Capacities and Competencies | STEM | Skilful Teaching and Enhanced Mentoring |
| GESL | Group Endeavours and Service Learning | STLJ | Student Teacher's Learning Journeys |
| GTC | Graduand Teacher Competencies | TE21 | Teacher Education Model for the 21st Century |
| ICT | Information Communications Technology | TPD | Teacher Professional Development |
| ITP | Initial Teacher Preparation | V ³ SK | Values ³ Skills and Knowledge |



Foreword

There is no better time than the present for change, particularly change that must be made towards a transformative teacher education system that produces quality teachers equipped to raise a new generation of 21st century learners. The case for strengthening the teaching workforce is indisputable as the demands on our teachers both in and beyond the classroom continue to escalate. Teachers are expected to prepare their students for a knowledge-driven global economy by helping them develop higher-order competencies and new technology-based skills, while at the same time building character and grounding values. In addition, Singapore pupils must remain rooted in their national identity against the backdrop of a multi-cultural, globalised world.

Acknowledging this reality, the National Institute of Education Singapore (NIE) embarked on a Programme Review and Enhancement (PRE) initiative in 2008. The PRE was an institute-wide strategic effort to review and enhance NIE's model of teacher education. While previous reviews have affirmed both the substance and structure of NIE's teacher education programmes, there must always be space for continuous improvement in order to be relevant and responsive to the changing education landscape. At the same time, the Ministry of Education's (MOE) initiatives in raising the quality of primary education, improving the professional development of in-service teachers, and preparing teachers for 21st century schools were critical fillips.

The outcome of the PRE was a strategic report entitled "**Teacher Education Model for the 21st Century**" or **TE21**. It was grounded in the belief that *21st century learners call for 21st century teachers*, and articulated a new teacher education model that would equip both beginning and serving teachers with the necessary values and competencies that would have impact on teaching and learning in schools. The TE21 Report would serve as NIE's blueprint for transforming its teacher education model to be 21st century-ready. It presented six key recommendations that aimed to give the best formal education and professional learning pathways to both aspiring and serving teachers to become 21st century teaching professionals while putting the 21st century learner as the heart of NIE's teacher education goals. The recommendations were geared towards strengthening NIE's teacher education model in terms of design, delivery and evaluation. Enhancements to these areas were proposed to encompass the entire continuum from initial teacher preparation (ITP) to teacher professional development (TPD) continuum, and focused on the following key areas:

- values-based philosophy of teacher education,
- teacher outcomes,
- curriculum refinements and
- accelerated academic pathways

Coming almost two years after the launch of the TE21 Implementation Programme in November 2009, this new report gives a frank rendering of the transformational journey undertaken to realise the recommendations. Translating ideas and good intentions into blood-sweat-and-tears reality has been a challenging, sometimes frustrating, but ultimately uplifting experience to say the least. The lessons which the NIE team has learnt on this journey would hopefully contribute to greater understanding amongst our peers and partners in the education fraternity on what works, and also what perils to avoid, in our collective endeavour to enhance the quality of teacher education.

NIE's TE21 implementation journey is by no means complete. There are a few more milestones yet to be conquered, long term outcomes yet to be assessed, and some obstacles yet to be overcome. The road ahead will require patience, inventiveness, resourcefulness, and resolve. Perhaps a bit of luck also won't hurt. But the journey so far has been the road worth taking.

Prof Lee Sing Kong

Director

National Institute of Education Singapore

TE21 Recommendations – A Recap

- 1. Adopt a framework of values, skills and knowledge** that will guide the design, delivery and enhancement of NIE's teacher education programmes and courses, thus serving as the underpinning philosophy of education. This framework, called *Values³, Skills and Knowledge* or *V³SK* focuses on three value paradigms – Learner-centred, Teacher Identity, Service to the Profession and Community, as well as the Skills and Knowledge teachers must possess to be ready for the 21st century classroom.
 - Strengthen NIE-school interactions through reflection in action, school-based inquiry or research, use of pedagogical tools to 'simulate' school environment and experiential learning.
 - Secondment of practitioners in schools to NIE.
 - Re-position the Enhanced School Experience for Postgraduate Diploma in Education (PGDE)
- 2. Articulate a Graduated Teacher Competencies (GTC) Framework** which is a set of professional standards, benchmarks and goals for NIE graduands. The competencies focus on three performance dimensions – professional practice, leadership and management, and personal effectiveness. The GTCs were developed in alignment with the professional standards set by MOE. As with the *V³SK* model, NIE will undertake to build the capacity of student teachers in these competencies during the course of their study or plant the seeds of awareness in areas that will be further developed with experience as in-service teachers.
- 3. Strengthen the theory-practice link in NIE's teacher education programmes** by undertaking distinct and inter-related initiatives:
 - Enhance the practicum through the introduction of Professional Inquiry Learning Sessions (PLIS) as one of its components. The PLIS comprises of teaching and learning discussions aimed at helping student teachers to reflect on and explore their practicum expectations and experiences before, during and after the practicum, and to develop a shared professional language
 - Adopt the Reflective Teaching Model as a common framework to help teachers consolidate their experiences and systematically reflect on their practices. This could also be used during the PLIS.
 - Strengthen mentorship at the practicum to beginning teacher stage, by establishing a Structured Mentorship Preparation Programme for School Coordinating Mentors.
- 4. Establish a pedagogies strategy and framework** to ensure that appropriate and effective pedagogies are used in the curriculum to equip teachers with the range of instructional strategies needed for classroom teaching. This strategy will incorporate a mechanism for sharing of good pedagogical practices among staff. In addition, facilities that support innovative and collaborative pedagogical approaches will be created to enable teaching and learning.
- 5. Establish an Assessment Framework of learning and for learning.** Under this framework, key processes that will enable educators and teachers to adopt innovative assessment practices *of* and *for* learning will be identified and scaled up. A set of assessment literacy outcomes that will consist of key elements of assessment competencies for teaching and learning in school will be developed. Part of the recommendation was to introduce the e-Portfolio as a means to assess and validate the NIE graduates' achievement of the characteristics and competencies articulated in the *V³SK* and GTC Framework whilst developing reflective teachers.
- 6. Enhance the available pathways for student and in-service teachers for professional development.** NIE recommended a staged approach for the implementation of a 2-year full time PGDE-Masters programme and the 4 + 1 accelerated Bachelor-masters programme for the top 10% of the cohort.



The Implementation Journey Begins

The implementation of the recommendations presented in the TE21 Report was the focus of the TE21 Programme which was launched in November 2009. The various initiatives spun off from the TE21 Programme were geared towards transforming teacher education in the areas of curriculum, pedagogies and assessment throughout the ITP-TPD continuum. These anchored the Teaching Strategy in NIE's 5-Year Strategic Plan or 3:3:3 Roadmap.

The TE21 Programme was spearheaded by an Implementation Steering Group, co-chaired by the two Deans from the Office of Teacher Education and Office of Graduate Studies & Professional Learning. They were supported by key academic and administrative leaders who led Core Groups which were composed of project teams, with their respective terms of reference to carry out the scope of work and relevant tasks to implement the TE21 recommendations. Close to 200 academic, research and administrative staff from across NIE were involved in this endeavour.

Using a matrix approach, the *Programmes Core Team* looked at how each of the recommendations could be implemented in the different components of the initial teacher preparation programmes – Education Studies (ES), Curriculum Studies (CS), Academic Studies (AS), Subject Knowledge (SK), Group Endeavours

and Service Learning (GESL) and Meranti – as well as in the Postgraduate Programmes. The organisation of the project teams reflected these study areas. A Soft Skills project team was created at a later stage to align with new MOE initiatives which had been launched, in particular, that of 21st Century Competencies and Student Outcomes.

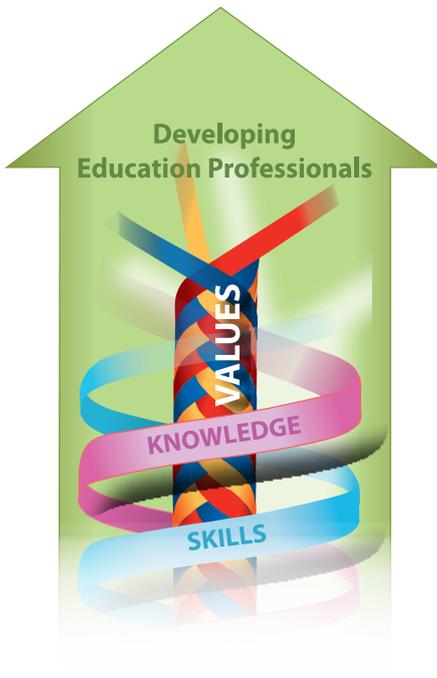
The *Theory-Practice Linkage Core Team* focused on key initiatives that aimed to strengthen the nexus between the theoretical foundations of the teacher education programmes and the practice of teaching. The project teams reflected this objective, namely Mentorship, Practicum, e-Portfolio and Professional Inquiry Project of the Master of Teaching degree. The quest for strong mentorship, starting from the ITP stage and continuing to the beginning teacher stage threaded these project teams together.

NIE adopted a phased approach in the implementation of the six recommendations. The three phases covered the evaluation of the coverage of current teacher education programmes, identification of gaps, action-planning, piloting of key initiatives and preparing for full roll-out so that these initiatives eventually become part of mainstream academic initiatives.

| TE 21 Implementation Steering Group | | | |
|-------------------------------------|--|---|--|
| Core Teams | Programmes | Theory-Practice | Organisation Capacity |
| | <ul style="list-style-type: none"> What we teach How we teach How we assess | <ul style="list-style-type: none"> Mentorship Enhanced Practicum e-portfolio | <ul style="list-style-type: none"> Capacity building Resources & Processes Teaching-Research Linkages |
| Project Teams | ES + CS | Mentoring | |
| TE21 team | AS + SK | Practicum | |
| | GESL & Meranti | Professional Inquiry Project | |
| | Postgrad Progs | e-Portfolio | |
| | Soft Skills | | |
| Phase 1 | Phase 2 | Phase 3 | |
| Nov 2009 – Jun 2010 | Jul 2010 – Dec 2010 | Jan 2011 – Jun 2011 | |

The Student Teacher's Learning Journey

Attributes of the 21st Century Teaching Professional



| V1 – Learner-Centered Values | V2 – Teacher Identity | V3 – Service to the Profession and Community |
|---|--|---|
| <ul style="list-style-type: none"> • Empathy • Belief that all children can learn • Commitment to nurturing the potential in each child • Valuing of diversity | <ul style="list-style-type: none"> • Aims for high standards • Enquiring nature • Quest for learning • Strives to improve • Passionate • Adaptive & resilient • Ethical • Professional | <ul style="list-style-type: none"> • Collaborative learning and practice • Building apprenticeship and mentorship • Social responsibility & engagement • Stewardship |
| SKILLS | | KNOWLEDGE |
| <ul style="list-style-type: none"> • Reflective skills & thinking dispositions • Pedagogical skills • People management skills • Self-management skills • Administrative & management skills • Communication skills • Facilitative skills • Technological skills • Innovation & entrepreneurship skills • Social & emotional intelligence | | <ul style="list-style-type: none"> • Self • Pupil • Community • Subject content • Pedagogy • Educational foundation & policies • Curriculum • Multicultural literacy • Global awareness • Environmental awareness |

To understand what were the components of the V³SK and the Graduand Teacher Competencies that were already covered in the teacher education programmes and courses, a mapping exercise was undertaken to obtain this baseline information. Programme and Course Coordinators played a crucial role as they had to evaluate each course in the Bachelor of Arts/Bachelor of Science (Education) and the PGDE Primary, Secondary and Junior College (JC) tracks. Of particular interest in this exercise were the topics, pedagogical modes and assessment tasks that addressed specific attributes and competencies outlined in the V³SK and GTCs.

This baseline information was important because it gave a composite picture of the content and design of the courses, subject, area of study, and of the programme. The mapping exercise affirmed that NIE's programmes did indeed sufficiently cover the components of the V³SK and GTCs. However, it was also acknowledged that the teaching of values might have been less explicit in courses under Academic Studies. Nonetheless, the coverage of the V³SK and GTCs in the whole student journey at NIE was comprehensive and sufficiently rigorous. The baseline information from the mapping exercise was also of particular value in helping to identify gaps in the coverage of the V³SK and GTCs, and providing direction in refining the curriculum.

“The implementation journey gave impetus for NIE faculty to rally together to reflect and renew our perspective on the scholarship of teaching as embedded within the V³SK paradigm. Beyond learner-centered values, role modelling by teachers with a strong sense of identity and professional community building, this journey exemplifies the symbolic aspects of the teacher unique both to NIE and Singapore. TE21 with its unequivocal emphasis on values is a bold and courageous stand to assert within teacher education that teaching is a calling and effective teachers have a unity of purpose in their personal aspirations, beliefs, interests and competencies with a view of impacting future generations.

Through TE21, we hope to bring about the skilful and thinking teacher in our graduands, who are able to demonstrate actualisation of the reflective teaching model through the portfolio approach and their ultimate impact on learners within their realm of influence.”

~ Professor Tan Oon Seng, Dean of Teacher Education

“My biggest learning point is that there has to be a unified goal that is recognised across the entire institute. Once it has been embraced, there must be unflinching commitment and dedication towards realising it. The impetus for change must come from a desire within to prepare the best teacher possible who can ensure that each child is able to maximise their life's chances. The journey is never complete and we need now to embark on evidence-based research that can tell us how efficacious our efforts have been and what continual improvements we need to make.”

~ Associate Professor Low Ee Ling, Associate Dean, Office of Teacher Education

“The V³SK and GTC models provide a clear overview of the professional competencies, standards and goals for teachers of the 21st century. The NIE curriculum which is structured on the two core models has increased my awareness of what is expected of me as a teacher and what I need to deliver to my students in the near future.”

~ Chen Foong, PGDE (Pri)

“The lecturers for the various subjects have conscientiously incorporated the TE21 and GTC frameworks in their delivery and it enables me (having left the education system a long time ago) to understand better why pedagogy nowadays involves so much learner-centred activities. After the lectures, I always reflect on my contract teaching days and a lot of the ‘mysteries’ then start to unfold. My favourite quote from the Learning Journey is “in order for us to be effective teachers, we have to be students again.”

~ Boon Heng, PGDE (Pri)

“The Learning Journey gives a brief but straight-to-the-point introduction of the two pillars of the TE21 Model: the V³SK model and the GTC framework. It shows us how they are incorporated into the various components of the initial teacher training programme. As academic staff, we can use it as a checklist in developing, delivering and evaluating our course content, so as to ensure that at the end of the courses, our beginning teachers possess the necessary values, knowledge and skills to be better educators of our young.”

~ Mr Ang Liang Peng, Lecturer

The mapping exercise ultimately led to a deeper understanding of the learning journey from the student teacher’s perspective – in terms of *what* they learnt and *how* they learnt. As students took up various courses to attain their qualifications, they acquired the theoretical foundations of the teaching profession, pedagogical-content knowledge, skills, as well developed the values that underpinned the profession.

Awareness of the desired outcomes was the first step towards developing the requisite values and competencies. It was crucial that every student teacher understood what were the expected outcomes from each course they would be taking in their programme of study. From the information gathered from the mapping exercise, a series of Student Teacher’s Learning Journeys (STLJ) was created for the Degree, PGDE and Diploma programmes. The STLJs made explicit the V³SK and GTC components to be developed in each ITP programme component, namely AS, CS, ES, Language Enhancement and Academic Discourse (LEADS), GESL/Meranti and Practicum.

The STLJs were also meant to guide student teachers in their reflections, and enable them to relate their experiences from classroom lessons through to teaching practice to the objectives of each course. At the end of their journey, they would have gained a holistic view of what they have learned.

The STLJs were first published and distributed to all student teachers from the July 2011 intake. From the 2012 academic year onwards, all STLJ resources will be made available on the e-platform. This includes an Interactive Mindmap where student teachers can map their personal learning journeys online.



“The booklet helps contextualize ideas from NIE & MOE to our career. Most of the time, when we read about V³SK, it is through the usual posters, which may come across as abstract and distant. With Learning Journey, the gap between concept and our future experience is bridged. For example, pages 10 to 21 elaborate on “Where in the learning journey will you find V³SKs and GTCs?” This helps explain the rationale behind the respective modules, as well as drawing links to the model.”

~ Kian Wee, PGDE (Sec)

Throughout the implementation journey, the NIE team remained cognisant of policies, developments and initiatives coming from MOE. For instance, the key elements of MOE’s 21st Century Competencies and Student Outcomes were seamlessly mapped to NIE’s courses to ensure continuing and consistent alignment between MOE and NIE directions.

Strengthening the Theory-Practice Nexus

“Through our dialogues and collaborations with colleagues from NIE, MOE and the schools, we found more commonalities and agreements rather than differences. This in turn allowed us to build on each other’s strengths and ideas in developing frameworks and programmes to support our teachers in their professional learning journey.”

~ Associate Professor Steven Tan

A strong emphasis on mentorship and reflective practice were the underlying principles behind the recommendations to strengthen the theory-practice nexus. Reflecting on classroom experiences and relating these to the theories learnt will facilitate learning. Mentorship by experienced teachers will enable student teachers to receive guidance and constructive feedback that will in turn reinforce their learning.

There was a great deal of constructive dialogue which took place between the NIE team and their counterparts at MOE on the subject of mentoring. Issues covered included identification of opportunities for mentorship to support teaching and learning, establishing the roles and responsibilities of mentors, training of mentors, guidelines for selection of mentors, recognition of mentors and rationalising the workload of the mentors. Ultimately, the consensus was that it is important to establish a mentorship framework to provide a shared understanding and a common set of principles for the teaching fraternity.

As mentorship was to be a core feature of an enhanced Practicum programme which NIE was developing, the conversations with MOE focused on mentor selection criteria and training to ensure better mentorship by School Coordinating Mentors (SCMs) during practicum. SCM briefings for mentors now include a short sharing

session on facilitation skills. More training opportunities are also being explored to better prepare the SCMs for their roles and responsibilities in mentoring the student teachers during practicum.

At the same time, MOE also began a Skilful Teaching and Enhanced Mentoring (STEM) programme to focus on mentorship for beginning teachers and involved 30 ‘prototype’ schools with the aim of discovering good mentorship models and practices for the mentoring of beginning teachers. This initiative included training of in-service teachers. A team of 10 NIE staff attended the STEM Accelerated Programme as it was felt that a clear understanding of the STEM programme would enable NIE to dovetail our training of SCMs to align to the larger mentoring framework.

Another new development was the creation of a dedicated Sub-Dean position to strengthen School Partnerships. As NIE continues to advocate a comprehensive mentorship framework with MOE and schools, the Sub-Dean, School Partnerships will be focusing on liaising with school personnel on practicum cases, developing and conducting “Mentor of Student Teacher” workshops for SCMs and practicum coordinators, as well as working with the Academy of Singapore Teachers on a smoother transition for student teachers to schools.





New Enhanced Practicum

The practicum is an important component of NIE's teacher education programme for ITP as it enables student teachers to put in context the theories learned and apply the skills of teaching. With a university-based teacher education, the practicum provides the link between theory and practice. The practicum also highlights the partnership between NIE and schools not only in the supervision and assessment of student teachers but also in mentorship.

NIE piloted a new Enhanced Practicum for the PGDE JC cohort in February 2011. The main structural changes are the introduction of **Focused Conversations (FC)**, and the structuring of pre- and post-practicum conferences with supervisors. The FCs provide a structured platform for student teachers to share with SCMs about their learning in NIE, issues encountered during the practicum on classroom management and motivating pupils, and about their learning in school towards developing teaching competencies. A Reflective Practice framework was incorporated to aid in the development of the reflective teacher – it helps them consolidate their experiences and systematically reflect on their practices. The four FCs are spread over the 10-week practicum period.

“TE21 was a colossal task and the obstacles were many. But it was a challenging journey and we have had great success thus far because of the ‘can-do’ spirit of everyone involved. I have drawn strength from the commitment and dedication of my colleagues. When we were debating on the pros and cons of introducing the e-portfolio, one colleague summed it all up - ‘if it helps the student teachers learn better, then it’s a good enough reason for me’. It’s a plain statement backed by a strong conviction, which is what spurs us in our collective effort to improve our teacher education programme. If having the right systems and processes is important, what has brought us this far is the passion of our NIE colleagues.”

*~ Associate Professor Liu Woon Chia, Associate Dean,
Office of Teacher Education*

| Number | Week | Focus |
|--------|--------|--|
| FC1 | 1 | Portfolio Sharing - “My Learning in NIE” Students are asked to share on what they have learnt from the courses at NIE that have influenced their conception of teaching and learning |
| FC2 | 3 - 4 | Managing Teaching and Learning I Students are asked to bring up topics on issues encountered in their lessons or with their students. |
| FC3 | 5 - 6 | Managing Teaching and Learning II Students are asked to bring up topics on issues encountered in their lessons or with their students. |
| FC4 | 9 - 10 | Portfolio Sharing - “My Learning in School” With reference to the Graduated Teacher Competencies, students are asked to share how the practicum experience helped to develop their teaching competencies |

SCMs supporting the Enhanced Practicum model facilitate four FCs with the student teachers under their charge. In the new model, apart from briefing student teachers about their roles and responsibilities, supervisors provide feedback on student teachers' portfolio presentation of *their learning in NIE* at the pre-practicum conference. They also listen to student teacher's portfolio presentation on their *learning in school* at the post-practicum conference.

As the structural changes in the new Enhanced Practicum involved a mindset change and paradigm shift, the implementation team conducted frequent dialogues and focused on competency building for SCMs. SCMs were encouraged to think of themselves as mentors, not just administrators or evaluators. Aside from communicating the various enhancements to the practicum at key platforms such as the Director of Schools meeting, the team also conducted sharing sessions and provided guidance and support for the SCMs through email and other communication channels throughout the 10-week practicum.

The feedback from the SCMs on the introduction of the FCs in the new practicum structure has largely been positive:

One SCM said that it presented **“good opportunities for professional conversations such that the micro-view of each practice discussed conveyed the fundamental idea that each lesson/ practice presents complexities that these young teachers should not take for granted.”**

Another added that it was **“a useful exercise as student teachers share their experiences, offer their actions, besides hearing alternative solutions from their peers and the SCM. They were reflective in this problem identification, action taken and alternative solutions approach to sharing of experiences. Student teachers encouraged each other and offered their view points and what they had done in their own classes. They were open-minded and shared voluntarily.”**

However, the SCMs also gave the feedback that having four FCs in 10 weeks was difficult to manage due to time constraints. Their suggestion of cutting the four FCs down to three has since been adopted for future cohorts.

While SCMs were committed to mentoring the student teachers, the structural changes posed some challenges in terms of their teaching load. The implementation team recognised the need to continue working closely with MOE partner, the Academy of Singapore Teachers, to resolve the issue of off-loading SCMs from their regular teaching duties, so that they can better fulfil their mentoring role.

With these enhancements to the practicum, the assessment of student teachers was subsequently fine-tuned to align with the various dispositions and competencies of the V³SK model and the GTC framework. In particular, professional attributes and attitudes were reflected in the Assessment of Performance in Teaching (APT) form, emphasizing particular elements of the three values paradigm of the V³SK model. This required the SCMs and Co-ordinating Teachers (CTs) to evaluate not only based on lesson observations but through evidence which could be obtained from the student teacher's reflections, feedback conferences and observations of their interactions with pupils and colleagues. As this evaluation approach was more challenging, the NIE team was mindful to ensure that frequent dialogue and sharing took place with all the key stakeholders - SCMs, CTs, practicum coordinators and supervisors.



Student teachers also responded to the Enhanced Practicum very positively.

“Prior to presenting my e-portfolio, there was quite a bit I had to go through in order to articulate my thoughts and feelings about my teaching philosophy, my values and beliefs etc. I guess the issue was that I'd often thought about these things but they stayed in my head because there was hardly any reason to explicitly express them in writing or other forms of media. FC1 allowed me to express myself more clearly, not only to others, but also to myself. And the process of arriving got me thinking more about my own position as an educator.”

~ Jianhao, PGDE JC 2010

“My greatest takeaway was about the implementation of what we have learnt at NIE - a repertoire of skills and pedagogies. Yet, implementation is a different ball game - What are some of the difficulties you encountered and some success stories? The question poses a reality check. So I think FC4 was good as it helped me realize that some things can be implemented, and they are effective and practical. It is a good application tool which I will continue using.”

~ Adrian Jayden, PGDE JC Jul 2010

“I felt that I learnt most from my fellow student teachers in getting to know their teaching philosophies and how each one of us presented our portfolios differently. Having to verbalize my beliefs about teaching actually strengthened them and reinforced my determination to put them to practice.”

~ Wayne, PDGE JC 2010

“The experience of doing FC1 forces you to make certain choices - I could not present everything I'd learnt; I had to choose the key things which I think helped me and shaped my beliefs in education... There's a lot of unstructured thinking going on, all these ideas come to you and you absorb them, but you may not have the time to fully form a particular framework to approach issues about education - but with FC1, because I was forced to think about what was - it became the foundation of MY philosophy of education. That aspect of ourselves as educators became more anchored, in terms of the beliefs that we held dear and certain things that we wanted to do in the course of our teaching experiences... FC1 was a filter for all these issues and ideas that we picked up over the course at NIE and we had to decide which were the ones we believed were right for us.”

~ Kelvin, PGDE JC Jul 2010



The e-Portfolio is an electronic collection of authentic and diverse evidence of a student teacher's learning and achievement over time, on which he/she has reflected and designed for personal development, as well as for presentation to audiences for specific purposes.

The e-Portfolio is a tool for:

- self-management
- reflective practice
- building connections
- showcasing oneself
- lifelong learning

e-Portfolio

The e-Portfolio was originally envisioned as an assessment and validating tool of NIE graduates' achievement of the characteristics and competencies articulated in the V³SK and GTC Framework. After much internal debate and deliberation, it was re-positioned as a **Teaching and Learning e-portfolio**, which was defined as a developmental tool to help student teachers aggregate and integrate their learning by charting their learning journey, including the development of their personal teaching philosophy over time. They would use their e-portfolios for a variety of purposes such as a repository for their pieces of work (artefacts), as a site for documenting their growth as learners and teachers, as an avenue for translating their reflections into words, as a channel for interaction with other users, and for gathering feedback from their tutors and peers. The e-Portfolio provides student teachers with a structure within which they document what they know and are able to do as teachers, and affords on-going opportunities for them to reflect and converse about their growing understandings of what constitutes good teaching in relation to the GTCs. This record will also provide evidence of the theory-practice link in the student's learning and classroom teaching. The e-Portfolio was piloted with the PGDE JC July 2010 cohort and subsequently formally implemented starting with the July 2011 PGDE JC and Primary cohorts.

While the portfolio can take on various forms, NIE has chosen to utilise an e-platform which can be easily accessed by student teachers and at the same time allows them to easily share with their tutors, supervisors and with their peers. The e-portfolio pilot used the Desire2learn platform, whilst the subsequent roll-out with the PGDE JC and Primary July 2011 cohorts involved the use of Google Sites.

There has also been extensive support provided for both student teachers and academic staff to familiarise with the e-Portfolio. The rollout phase included a one hour time-tabled slot per week for the course *QFL541 (Using e-Portfolio for Learning and Teaching)* to guide them through the process, implementation, practices and deliverables. This was facilitated by faculty who were approached to help out. Sessions involved the 'what

and why of portfolio', 'teaching philosophy', 'reflective practice', 'sharing of portfolio during practicum', among others. Video tutorials within the e-portfolio platform were also made available. Additional support was given by the Centre for eLearning (CeL) through 'clinic' sessions for students who encountered difficulties. CeL also ran a number of training sessions for faculty who were new to e-portfolio.

There was a great deal of synergy between the e-Portfolio and the Practicum teams at the coordination and implementation level. The scheduling of the QFL541 was done by the TE21 e-Portfolio team while the Practicum Unit was involved in the sharing sessions where student teachers would use their e-portfolios to make formal presentations during their practicum stint. In essence, as a means of consolidating their practicum learning journey, student teachers would, at the start of their practicum in the schools, share with their SCMs their '*learning in NIE*', their teaching philosophy, beliefs, learning experience, and at the end of their practicum, their '*learning in school*'.

In NIE, the approach has been to integrate the e-Portfolio into the curriculum as opposed to treating it as a stand-alone project for student teachers in a specific course. Students are therefore encouraged to relate lessons and activities in the NIE classroom to their teaching practice in the school classrooms. The portfolio encourages integration of experiences, learning modes, contexts and personal reflection over the course of their study. The e-Portfolio features prominently in the Enhanced Practicum where students present artefacts extracted from it at the first and fourth Focused Conversations.

The implementation of the e-Portfolio was not without its challenges. From the start, there was a need to create buy-in among student teachers and faculty. For example, the "evolution" of the e-Portfolio from what was first envisaged as an assessment tool to that of a developmental tool was a result of incorporating feedback from many of the faculty who had expressed concern about the practicality of assessing various artefacts that represented students' learning from various courses across NIE. Implementing the e-Portfolio as a teaching and learning tool also called for a significant mindset change. The e-Portfolio team had their work cut out for them, having to constantly communicate, persuade,



and encourage faculty and student teachers to get on board, and coupled with the considerable efforts needed to build competency in the use of the e-Portfolio platform and tools. The team also then had to deal with the problem of varying competency levels in the use of the new technologies. Additional workshops and training sessions had to be mounted to accommodate the various profiles of the users, for example, customising sessions which would be more informative for novices, or sufficiently challenging for experts.

Currently, the e-Portfolio is under the purview of an ad-hoc committee that had been tasked with the pilot exercise. As it is rolled out to cover more programmes and cohorts, the next step will be to establish a more formal mechanism to ensure its sustainability and future development.

The e-Portfolio pilot received positive feedback from SCMs and student teachers:

One SCM noted that it allowed the student teachers **“to think through and verbalise their reasons for joining the teaching profession and record their teaching philosophies and lessons learnt from their NIE course”**.

Another offered that it was **“a good platform for them to realign their actions to their goals. It helps student teachers assess their seriousness in joining the profession and sets the tone of the whole Practicum session.”**

Another said that it helped **“begin the habit of being reflective - which plays a very important part in teacher’s growth and development”** and that it **“was useful as it helped the student teachers to be focused on what they set out to achieve. It also helped them to take stock of what they have learned about their teaching and themselves during the practicum with reference to the given set of competencies”**. Many **“felt rejuvenated by the very impressive e-portfolio platform, artefacts and meaningful reflection.”**

The pilot exercise for the e-Portfolio culminated in an e-Portfolio Day which was held in May 2011 to showcase the e-Portfolios of 129 PGDE JC students. There were a total of 19 sharing sessions organised and students were grouped by their CS subjects. Lecturers and students gave positive feedback on this activity. Following the pilot, the e-Portfolio was rolled-out to the PGDE JC and Primary Jul 2011 using Google Sites and the platform is continuously being refined. CeL has been tasked to train more NIE staff on how to use this platform to facilitate the interaction with students.

Students involved in the pilot run also had their say about their e-portfolio experience:

“It is important that student teachers have an online avenue for documenting their learning and work experience in education. This allows them to keep their work samples in an online platform, which allows for the school, whether current or future, to get to know them better in a more objective manner. It is also crucial for career advancement opportunities.”

~ Andy, PGDE JC Jul 2010

“It provided a platform for everyone to share the problems faced in the classroom and allowed everyone to pitch in their ideas on to how to manage them. I learnt the most from this mutual sharing and generation of ideas.”

~ Candy, PGDE JC 2010

Research-Practice Synergy

A critical aspect of bridging theory and practice involves strengthening the link between research and practice. Teaching practice should be informed by evidence provided by research in terms of content coverage and new pedagogies, as well as research on individual teaching practices that could affect the design of programmes and courses. NIE is well-placed to carry out this task because of its strong research culture and the interweaving work of academic staff as researchers and teacher educators.

The Office of Education Research (OER) has been acutely cognisant of the need to focus on the research-practice synergy. In its Sixth Call for Research Proposals, teachers and teacher education was identified as the foci for research proposals. The following topics were highlighted:

- The development of teachers' identity, professionalism, and practice (e.g. the impact of TE21 on teaching practices and teacher learning, development of in-practice critical reflection);
- Pedagogical Content Knowledge for pre-service, beginning, and in-service teachers;
- Related issues of teacher development, for example, NIE's own teacher education practices, professional learning communities, and mentoring;
- Other complementary teacher education research areas like inquiry-based learning and the role of context in learning.

"Teachers are meant to see themselves not merely as implementers of a given approach, but rather as participants in a community of inquiry into new ways of learning and teaching. As such the emphasis of teachers' deep involvements in professional learning communities is a critical way forward in their professional development."

~ Professor Lee Wing On, Dean of Education Research

To create awareness of the research efforts that aimed to impact teacher education practices, such projects have also been regularly featured in OER's publication, Research in Education (ReEd). The exemplars of research by NIE faculty related to programme evaluation, teaching and student teacher's learning were on:

- i. Analysis of own teaching practices and promoting science inquiry approach to teaching
- ii. Maths pedagogical content knowledge
- iii. Technology integration with pedagogy and curriculum
- iv. Self-learning process
- v. Quality assurance
- vi. Building an evidence base for initial teacher preparation

NIE's education research contributes to advancing the research-practice synergy by enacting new educational models of teacher learning and supporting the development of knowledge for a very different kind of pedagogy needed in the 21st century. Teachers are meant to play an important role in making connections to big disciplinary ideas, directing attention to different elements of inquiry, using the students' work as a resource for modelling, and highlighting other critical perspectives on learning and subject matter.

NIE's education research projects provide useful insights into the ways in which teachers shift their conceptions on how they support students in their learning. These insights include teachers needing to become adept in "pedagogical moves" that serve as a means of transferring control of the learning process to students so that they themselves come to understand and enact the moves needed to participate in deep disciplinary learning.

Advancing Pedagogical Development

The **TE21 Summit** was organised in November 2010 with the theme “21st Century Teachers call for 21st Century Teacher Educators”. Comprising of workshops and sharing sessions related to themes of pedagogical development and capacity building, the event was a step in engaging the whole NIE community in transforming the delivery of teacher education by creating awareness of good practices by staff in the various Academic Groups. These practices encompassed not only the actual teaching modes but also the use of technology as tools to enrich teaching and learning in the classroom.

Adopting effective and appropriate pedagogies in teacher education also required knowledge of developments in the wider education landscape. MOE’s recent initiatives to transform primary education and the emphasis on soft skills in the school curriculum gave context to the improvements that NIE teacher educators must make in their own practices. MOE personnel from the relevant divisions - Educational Programmes (EPD), Curriculum Planning and Development (CPDD) and Educational Technology (ETD) - were invited to present their latest initiatives as these would have implications on NIE’s ITP and TPD programmes.

There was a fruitful exchange between NIE faculty and EPD officers about teaching and learning of 21st Century Competencies in schools, its basic principles, how it is being taught in schools and the actions taken to build teachers’ capacity for teaching. CPDD gave an overview of holistic assessment to support learning and development in primary schools, while ETD highlighted the key strategies to ensure that pupils were ICT- ready for the future and the steps it has taken to harness ICT to enhance learning experiences in the schools.

The TE21 Summit also provided an opportunity for NIE’s research centres, namely Centre for Research in Pedagogy & Practice (CRPP) and Learning Sciences Laboratory (LSL) to share some of their research outcomes and applications to teaching and learning in schools. In particular, Professor David Hogan, NIE’s Principal Research Scientist, presented research that examined current pedagogical discourse in Singapore and which tracked the changes in school pedagogical practices since the implementation of the Teach Less Learn More initiative. From this, Prof Hogan proposed a new perspective that Singapore needs to further transform its future pedagogical practices in order to nurture the desired educational outcomes of the 21st century learner.

Feedback was very positive, as summed up in the comments given by an academic staff, “[The TE21 Summit] increased my awareness of what colleagues in other departments are doing or researching. I also learned things that I can apply to my work through the exchange of ideas. It gave an opportunity to meet up with members of the other AGs.” The success of the event also signalled the need to capitalise on the momentum established.

Discussions are on-going on developing an annual learning showcase for best pedagogical practices and research findings.





Facilities that enable teaching and learning

Aside from the different pedagogical modes and tools being explored by faculty, a parallel effort took place to explore possible ways to enable the use of innovative pedagogies. The outcome has been a remarkable transformation of teaching facilities into interactive learning spaces. All 72 tutorial rooms have been re-configured to become Collaborative Classrooms that foster greater interaction and learning between tutors and student teachers.

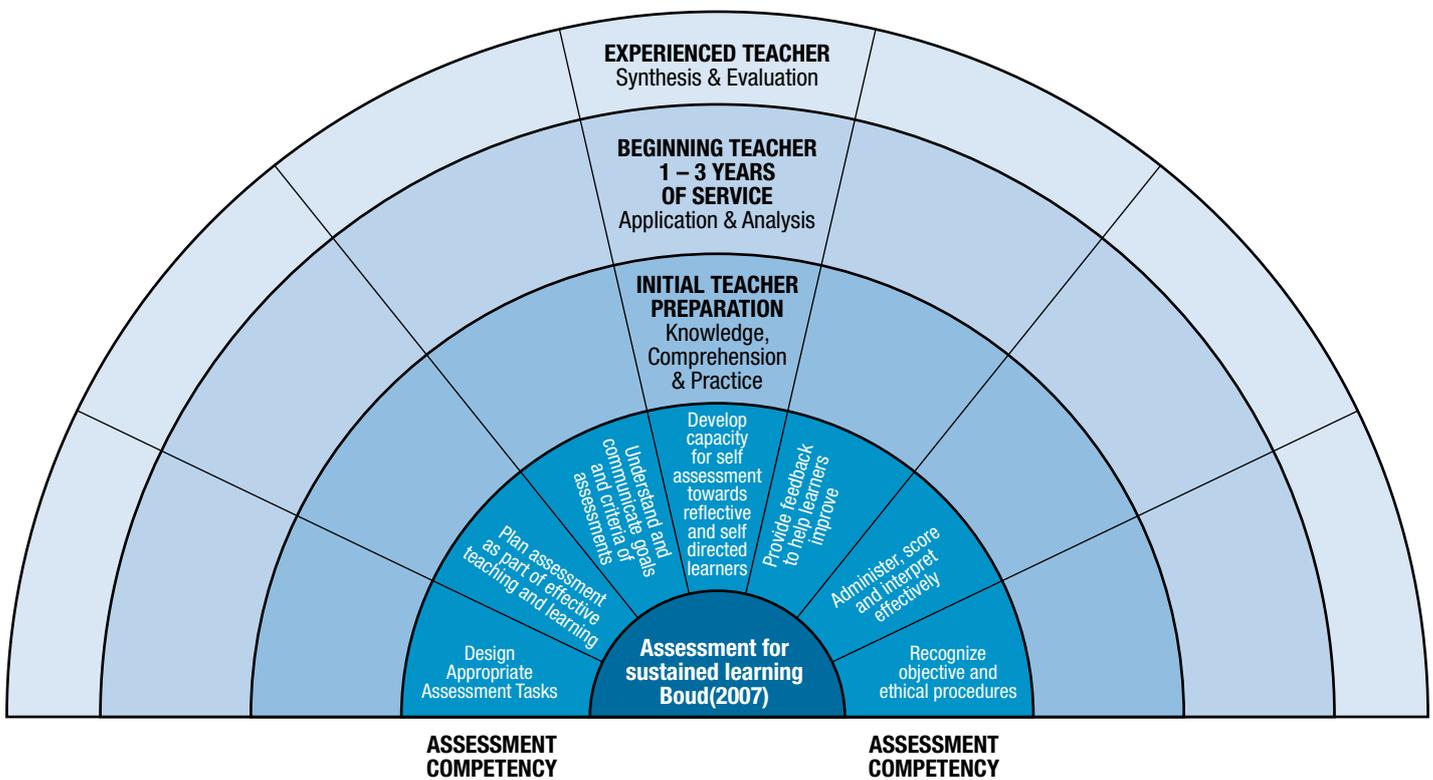
Towards a functioning Assessment Competency Framework

NIE recognises that assessment skills vary for different levels of pupils and it is necessary to train student teachers to assess for learning and of learning based on these differences. This was a key consideration in making the Assessment Competency Framework (ACF) operational. Thus far, faculty have deliberated on how to implement the ACF, and how to develop assessment competencies. The dialogue has also involved sharing of assessment practices in the various subjects.

In the meantime, further progress continues to be made in the implementation of the assessment initiatives:

- A compilation of the different assessment modes modelled in each individual course has been completed. This is to ensure that there is sufficient variety in the modes of assessment as well as a mixture of summative and formative assessments.

- A consolidation of the assessment literacies covered in Education Studies courses has been done and this has been provided to the Curriculum Studies coordinators to ensure alignment
- An online site has been created which includes information on assessment terminologies, key readings on Assessment for Learning and Assessment of Learning
- As a starting point for building up student teachers' assessment competencies, an ES Level 2 "Assessment Course for upgraders" (Dip Ed crossover and returning teachers) is being offered to cover key aspects of assessment. The course has strong alignment with the competency requirements under the Assessment Literacy Framework.



Graduate Commitments, Capacities and Competencies

The professional development of teachers remains a priority for both NIE and MOE. To ensure that there are opportunities for student teachers and in-service teachers to attain higher degree qualifications, NIE will continue to pursue dialogue with MOE on enhancing available professional development pathways.

The NIE Project Team for Professional Development was tasked to establish a framework similar to the Graduated Teacher Competencies Framework which was originally crafted with the NIE student teacher on the ITP programme in mind. For one thing, the profile of candidates who complete NIE's graduate programmes are more broadly prepared for work both within and outside of education. They would have been equipped with knowledge, skills values and dispositions that have been enhanced through their graduate studies at NIE.

A separate framework known as the Graduate Commitments, Capacities and Competencies (GC3) Framework was drawn up to articulate the following expected outcomes of candidates who have completed NIE graduate programmes:



i. **Expanded knowledge of their disciplines and beyond. This means that they have:**

- a. demonstrated mastery, creation and application of knowledge
- b. grown in their understanding of the structure and nature of knowledge
- c. developed an understanding and appreciation of the evolving nature of knowledge
- d. shown appreciation for multiple ways of knowing

ii. **Developed the habit of mind of critical inquiry. This means that they:**

- a. are open-minded, able to question assumptions
- b. are critically reflective; that is, able to recognise potential for on-going individual and collaborative growth
- c. do not take things for granted
- d. are able to understand problems in time and space
- e. are able to grasp literal and symbolic meanings (metaphorical)
- f. are able to see issues in social contexts
- g. are able to derive implications and/or applications for a wider purpose or community

iii. **Enhanced their communication competencies. This means that they are able to:**

- a. develop points of view and defend arguments with evidence
- b. listen open-mindedly to arguments of others

- c. engage in critique, collaboration and consensus building

- d. communicate through multi-modalities in diverse contexts

iv. **Enhanced their leadership competencies. This means that they are able to:**

- a. motivate knowledge manipulation and generation through provision of the necessary supportive conditions
- b. enable change and innovation by encouraging new ways of knowing and doing
- c. facilitate and support the work of others with empathy and care

v. **Demonstrated values and dispositions consistent with the broad mission of NIE graduate programmes. This means that they have demonstrated willingness to:**

- a. maintain an attitude of humility regarding their own knowledge
- b. be sensitive to multiple contexts (maintain perspective consciousness)
- c. hold critical perspectives (maintain tentativeness and open-mindedness)
- d. value diversity and differences
- e. develop a pro-active sense of social responsibility and justice
- f. act with ethical sensitivity

“NIE’s professional development programmes aim to provide options for teachers to advance themselves academically (through acquiring a higher degree) and professionally (through acquiring deeper content and pedagogical knowledge and skills). We continue to expand our offerings to match the expectations of life-long learning in the 21st Century, and particularly to help teachers graduate with a critical mindset which is commensurate with a higher order of enquiry and discourse.”

~ Prof Paul Teng, Dean, Graduate Studies and Professional Learning

Work-in-progress, Iteration and Refinement

While TE21 is very much an NIE blueprint crafted in the context of Singapore's teacher education landscape, NIE has been very mindful of the need to constantly seek input and iteration to further refine and improve on its model. One of the first opportunities to engage with distinguished experts in teacher education presented itself in January 2010, shortly after the official launch of TE21. A TE21 Roundtable Discussion was held to spark dialogue and elicit expert views from two renowned academics in the field of motivational learning – Prof Edward Deci and Prof Richard Ryan – to further inform the new teacher education model. The result of the roundtable discussion was the report "Perspectives in Motivating Educators and Learners". It underscored the key issues and challenges of teacher education from the perspective of students',

teachers' and teacher educators' motivational learning. The knowledge drawn from this exchange provided valuable lessons on raising teacher professionalism in the 21st century landscape.

NIE was also fortunate to host Prof Linda Darling Hammond, Charles E Ducommun Professor of Education, Stanford University, who visited in September 2010, and on an earlier occasion, Prof Susan Fuhman, President of Teachers' College, Columbia University, who delivered the CJ Koh Professorial Lecture in March 2009. Both these renowned scholars in teacher education contributed frank and encouraging views on NIE's transformative efforts and the challenges faced in the TE21 implementation journey.

“One of the things that is really unique about the NIE is that it is able to look at pushing the envelope in terms of what education can be from every angle and tie it together. The initial training for teachers so that they can teach in a 21st century modality, the way in which you train principals to create schools that will allow teachers to engage in this kind of work, the research and development that allows us to figure out what new learning strategies could be, what new teaching strategies could be, how to integrate technologies, all of that is actually integrated in the NIE, which is very involved in the life of schools. So it's a unique institution in all of those I've seen across countries in the world. It's really a national treasure for Singapore.”

~ Prof Linda Darling Hammond

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