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## **REPOSITIONING THE BA/BSC PROGRAMME: PROGRAMME DEVELOPMENT ISSUES**

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**Abstract:** Singapore is implementing major reforms in its education system to position it to better respond to the challenges of globalisation. As a consequence, the reform of teacher education has become a priority. This paper will examine the context and issues in teacher preparation from the perspective of the development of a degree programme, the BA/BSC with Diploma in Education. It will examine the weaknesses of previous programme formulations and the emergence of new clienteles. It will also examine issues related to the decision to make it a primary only specialisation, the roles envisaged for academic content, the introduction of curriculum content as a component, the provision of general electives and essential modules and the positioning and duration of the Practicum, among others. It will conclude with some reflections on what it will take to make the new curriculum successful.

### **Introduction**

By the late 1980s, the teaching force in the primary and secondary schools in Singapore reflected an imbalance, with a preponderance of non-graduate teachers in the former and graduate teachers in the latter. The situation in the primary schools needed to be rectified in order to improve the quality of the teaching force at this level, given the recognition that well-qualified graduate teachers would make a difference to the nurture of the young (6-11) precisely because they are closer in age and experience to this age group. It was in this context of the need to upgrade primary education and to increase the supply of graduate teachers in the primary schools that the Institute of Education was reconstituted to become the National Institute of Education as part of the Nanyang Technological University in July 1991. While it continued to offer the Post-Graduate Diploma of Education and Diploma of Education, it was, for the first time, to offer the Bachelor of Arts with Diploma of Education and Bachelor of Science with Diploma of Education programmes. These new four-year BA/BSc with Dip Ed degree programmes have the following main features:

- a. Emphasis on academic content and pedagogical training. The academic content in the general programme is provided through the traditional teaching subjects that are taught in secondary schools. These subjects include Geography, History, English Language, English Literature (Drama was introduced later), Biology, Chemistry, Physics and Mathematics. Art and Music, Chinese Language and Chinese Literature, and Physical Education are the subjects in the specialisation programmes. Every student has to offer two academic subjects with equal emphasis in terms of the number of modules per subject.
- b. Pedagogical training dominates the first two years of the programme while the academic content is predominantly the focus in the last two years. One reason for this content-after-pedagogy model was to enable the better trainees within the Diploma in Education

programme to proceed to their third year of the degree programme and to graduate with an additional two years. Also, there was the need to enable students to attempt to qualify for honours which was pegged at NUS levels.

- c. A fifth honours year in one academic discipline is open to those who qualify.
- d. Within the structure are the educational studies, curriculum studies and the practicum components, as in most teacher-training programmes abroad.

The quality of the academic studies component of the new programme was pegged to the corresponding degrees offered by the National University of Singapore (Bachelor of Arts and Social Science and the Bachelor of Science), in terms of depth and rigour. This ‘academisation’<sup>1</sup> of teacher training obviously resulted in a tension between the pedagogical and academic preparation, the latter implicitly presumed in the disciplinary engagement of students. The significance of the academic content is explicit in the additional honours year a good student has to spend on one academic subject.

While the initial focus of the degree programme was very clear indeed, i.e., to produce graduate teachers for the primary schools, in 1994 it evolved into the ‘total’ teacher model where every student was trained for both the primary and secondary schools. This arose partly due to the shortage of teachers in the secondary schools, and partly due to the demand from students who generally perceived that the primary schools would bestow on them a lower status than the secondary. In this new model, all trainees were trained to be versatile and prepared to teach in both the primary and secondary schools wherever they were deployed. From the Ministry of Education’s point of view, it afforded great flexibility in the deployment of graduate teachers. While the objective seemed commendable, it soon became evident that the students were overworked not only in terms of the pedagogical modules they had to take, but also in terms of the primary and secondary teaching practice attachments they were required to undertake. The last point brought into question the issue of sufficiency of training and preparation to teach in both the primary AND secondary schools. The pressure created on trainees and the untenable position NIE soon found itself in necessitated a review of the degree programme in 1997. The revised programme proposed two separate tracks – the primary or secondary but not both - and this was adopted for implementation in July 1998. While the programme looks neater and the workload of students much more manageable, from the resource point of view, this was not going to be cost effective especially when the numbers of students applying to the degree programme had been declining. Although this revised programme was implemented in 1998, a significant impetus for a thorough reexamination of the degree programme was provided by the need to attract new ‘clienteles’ into the teaching profession. This reexamination was also timely given the massive change in the educational environment in schools brought about by the implementation of the various initiatives under the “Thinking Schools and Learning Nation” paradigm in the last two years and.

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<sup>1</sup> While this elevation of IE to a university institute could be argued as the ‘academisation’ (Thomas, 1996) or ‘universitization’ (Sharpe & Gopinathan, 1993; Gopinathan, et al., (1999)) of the institute, it would be better perceived from the viewpoint that its new role of producing degree teachers could not be fulfilled without it attaining a university status. It was clear that only as a university-status institute could it offer any degree programmes while its traditional role of training non-degree teachers under the Diploma in Education continues as before.

## REPOSITIONING THE DEGREE PROGRAMME - FACTORS

From the above, the current review of the Degree programme at NIE was a direct response to two important stimuli:

- a. the inherent weaknesses within the programme itself
  - b. the changing external environment which makes a repositioning of the degree programme inevitable
- a. The inherent weaknesses within the programme have been alluded to above, which in summary include,
- The imbalance and tension between the academic content and pedagogical training with the perception that the academic content took precedence over the pedagogical. This perception was inevitable in the way the programme was designed and implemented. Given the academic emphasis of the Bachelor of Arts or the Bachelor of Science it was the disciplines that were invariably accorded greater attention than the pedagogy even though the former constitutes 40 % and 47 % of the total Arts and Science programmes respectively (BA/BSc with Dip Ed – primary). This prominence is even starker in the honours year in some disciplines when students concentrate wholly on one academic subject with hardly any pedagogical exposure at all.<sup>2</sup>
  - Evidently, over the years the focus of the degree programme has become diffused, going from primary specialisation to the both primary AND secondary (under the total teacher concept) and then to either primary OR secondary track. Changes have also been introduced along the way, such as the module definition in terms of academic units (from 2 to 3 Academic Unit modules), which had implications on the number of modules that can be offered, the introduction of essential modules<sup>3</sup>, general electives and curriculum content. But one could not get away from the dominant emphasis given to the academic content preparation in the BA/BSc with Dip Ed even though the 1998 revised structure tried to extend the pedagogical training to the third year of study.
  - It appeared that the programme was unattractive because of the relatively small numbers who applied to join the programme despite efforts to recruit them.

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<sup>2</sup> In disciplines such as Biology, History, Mathematics, and Physics. Disciplines such as Art, Chemistry, Chinese Literature, Drama, Geography, Literatures in English and Music have one pedagogy-related module each; while subjects like Chinese Language and English Language there is greater overlap between the pedagogical and academic content.

<sup>3</sup> The introduction of this component was governed by the rationale that all students should be exposed to issues that have wider, global appeal and implications, thus broadening the curriculum. Two types of essential modules are provided: the first set comprises three modules (Environmental Studies and Global Issues, The Teacher and Society and Critical Reading and Writing) which all degree students must offer, and the second comprises a module each for the Science and Arts trainees (Multicultural Studies for the Arts trainees, and Science and Civilization for the Science trainees, and Health and Wellness for all Physical Education trainees in both BA and BSc with Dip Ed programmes). The essential modules must not be confused with the general elective modules which are offered with the objective of either deepening of subject knowledge within a discipline and therefore taken by trainees whose academic subject is in that particular discipline or broadening of knowledge for trainees from other disciplines. Trainees are free to choose the general elective module he or she wishes to offer.

b. External factors also came to play in pushing NIE to review its degree programme. These took the form of:

- new initiatives like information technology, National education, Creative and critical thinking, project work etc, initiatives which sought to change the character of teaching and learning in Singapore schools under the ability-driven<sup>4</sup> education paradigm. The initial teacher training, particularly the degree programme, which is over four years, has to reposition itself to produce teachers for this new twenty-first century environment and challenges.
- As a response to these, the curriculum review framework for teacher education is based on the Desired Outcomes of Teacher Education and the Attitudes, Skills and Knowledge (ASK) model.
- The A-level pool of applicants into NIE was declining and yet the degree choices open to them at Singapore's three universities are now wider. At the same time, there are other potential pools that have not been recognised as having the potential to be trained to become teachers. The potential pools of students are:
  - i) A-Level students<sup>5</sup>
  - ii) Polytechnic Diploma Holders<sup>6</sup>
  - iii) Non-graduate teachers in schools (Cert Ed and Dip Ed holders)<sup>7</sup>
  - iv) Direct Dip Ed upgraders<sup>8</sup>

Teacher training programmes would now cater to a wider range of candidates who have varied pre-university education and qualifications, but who nevertheless could be moulded to be effective teachers in our schools. A new programme that caters to such a diverse group needed to be conceptualised and implemented.

- Given the problem of declining student numbers and the existence of two tracks in the degree programme, and in the light of an increasing load of in-service courses NIE has to offer, the question of resource use became significant. NIE could not satisfactorily cope with a situation of competing demands from pre-service and in-service training without rationalising the use of resources through more focused programmes.

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<sup>4</sup> In the knowledge-based economy, it is now no longer sufficient for school children to acquire information and skills for the marketplace, they must be critical and creative thinkers and independent learners with the ability not only to solve problems but to innovate and to generate new ideas and new technologies. This ability-driven paradigm has been adopted by the Ministry of Education in its current drive to change the school learning environment in Singapore.

<sup>5</sup> The number of applicants was declining or at best, has remained constant.

<sup>6</sup> The number of applicants has been increasing, but in the past, they were not taken directly into the degree programme because of the A-level entry requirement. These candidates completed the Diploma of Education first, and based on good performance, joined the degree programme in their third year.

<sup>7</sup> This is a large pool in schools. These serving teachers welcome the opportunity to upgrade themselves locally in a degree that is recognised by MOE plus the fact that they could obtain no-pay leave and have their tuition fees paid by the employer.

<sup>8</sup> A small percentage of the Diploma of Education graduands who have already spent two years proceed to the degree programme based on academic performance, and they complete the degree within an additional two years.

## **THE NEW DEGREE STRUCTURE – SALIENT FEATURES AND RATIONALE**

Arising from a long process of review of the degree programme involving NIE, MOE and representatives from schools, a new degree programme, the Bachelor of Arts (Education) and Bachelor of Science (Education) has been proposed. The new degree structure takes cognizance of the need to produce primary school teachers and a programme that would appeal to a wider pool of applicants without compromising quality. This four-year degree programme allows trainees to graduate with honours based on overall performance. The various components of the programme have been structured to provide sufficient flexibility for different groups of students to be admitted at different entry points. Non-graduate teachers - whether they have been in service or those who have just completed their Diploma in Education - could be granted exemption for certain modules or components of the programme, thus enabling them to graduate in two additional years. All trainee teachers will be trained to teach English, Mathematics, Science and Social Studies, subjects that are found in the primary school curriculum. While academic rigour is maintained through one academic subject, and pedagogic skills remain essential, these two parts are further integrated through the additional component of curriculum content<sup>9</sup> subjects. The range of academic subjects has also been reduced to those that are relevant to the primary school curriculum.

While the professional preparation of teachers for the primary school is now given significance, some degree of depth, breadth and balance is maintained, so that the programme provides some degree of coherence through the various components and also throughout the four years of study. Elements of pedagogy and subject content are better distributed throughout the four years unlike the earlier model which allows for them to be extended up to the third year while the fourth year was seen as academic subject preparation for the honours year.

The new degree programme is divided into two tracks – the general track comprising the following as the one academic subject – English Language and Literature, Geography, History, Mathematics, Biology, Physics with Chemistry, and the specialisation track involving Chinese Language and Literature, Art, Music and Physical Education. A separate programme is envisaged for the Malay Language and Literature, but this is for the secondary specialisation only due to the great need for teachers at this level.

### **Issues and Implications**

Given that the external environment is volatile and changes are inevitably destabilising, a country's educational system must not only adapt rapidly and change, it must in fact be anticipatory of such changes. Thus, teacher education, a basic cog in the complex educational machine, must also be brought under constant review. A teacher training programme that produces teachers who lag behind school curricular and organisational reforms would be a liability to the whole educational system and economy. Having said that, no amount of review is final or complete, and many questions would need to be constantly asked and answers sought because the latest reform would soon be overtaken by new events and initiatives, as the experience at NIE in recent years has shown us. Thus, any current review must at the same time fix an eye on future changes in the environment that may make further reviews or even a

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<sup>9</sup> Elaborated later in the paper.

complete overhaul of a programme necessary. In the context of the current repositioning of the degree programme, several issues and implications have been recognised by the committee that should be given further thought.

#### **a. Academic Challenge**

Academic challenge is fundamental to and expected of any degree programme. While the academic challenge of a degree programme may be difficult to define, it nevertheless could be gauged when the programme is compared across all programmes within a university or when compared with similar programmes across several universities, local as well as abroad. As far as the BA/BSc (Education) course is concerned, the question of academic challenge arises in relation to the many types of modules offered under the various components that make up the professional degree programme. Does this academic challenge pervade the whole programme through its various components that include academic subject, curriculum studies, education studies, curriculum content, essential modules and general electives? It is in the nature of things that the more components there are in a programme, the more each component would be measured against each other and some would invariably be perceived as less challenging than others. Here, the perception of academic challenge varies between students and educators on the one hand, and between content staff and methods staff on the other. It is important that any gaps in perception be narrowed if not removed altogether. To be realistic, one has to admit that this dissonance and perception of academic rigour will always remain, particularly so in a teacher preparation course that tries to fulfill both the academic and professional demands. But as our clientele, the trainees' perception of rigour and academic challenge should be given due attention. It is important to note that trainees who join the degree programme would have obtained admission to a degree course at the local universities, and hence they would have been perfectly able to judge and be justified to make such demands in the course they are taking. Components such as curriculum studies and curriculum content and general electives must stand, in their own right, as both challenging and demanding, consistent with a university type expectation in the way they are planned and developed, delivered and assessed.

While academic challenge should not be an end in itself, it should be counterbalanced by the competencies that the graduates display at the end of the degree course. In the final analysis, one has to ask the questions 'Will our graduates be professionally competent and academically able to handle the difficult tasks in schools?', and 'Would they have developed the mental ability to pursue higher levels of academic challenge and teaching competencies through upgrading courses?'

#### **b. Coherence and Completeness**

Given the many components that make up the new repositioned degree programme to achieve certain expected outcomes, the issue of balance and coherence is equally important. Is the whole attained through the sum of all its parts? How would one determine what is sufficient in a particular component relative to others in the process of fashioning the end product? To illustrate the point of coherence in the repositioned degree programme, reference is made to the Essential Module and General Elective components. These two components were designed in the context of the Nanyang Technological University's efforts to enrich and broaden the training of undergraduates in the engineering and business schools. Since NIE forms part of the university, it was logical that the EM and GE components be introduced to the institute as well. However,

within the context of an already varied mix of components in the degree teacher-training programme at NIE, would the introduction of these two components be really necessary? While their introduction in the parent campus was justified, wouldn't these two components add additional burdens to an already packed teacher training programme, when in fact the time released could be better devoted to finding ways to strengthening the teacher education programme itself. The repositioned degree programme did not question the basic assumption and therefore EM and GE modules still form important components within its programme. Some examination of this issue would be in order.

The proposed degree programme contains an element of completeness in the preparation of the primary teacher trainee to handle all the main subjects taught at the primary level. This is done through the Curriculum Studies (CS) modules in English Language, Mathematics, Science and Social Studies, as well as through the curriculum content modules. In the past, only the first two CSs were compulsory while the third CS could be selected from either the Teaching of Science or Teaching of Social Studies. Since the need for science teachers is great and given the fact that the integrated science is examinable at the Primary 6 level, while Social Studies is not, the Ministry of Education requires all trainees with the minimum O-level qualification<sup>10</sup> in a science subject to take the former. However, the new repositioned degree envisages the training in all four CSs, which ideally would be most welcome, but in practical terms may cause some problems particularly among trainees who are weak in science. It is a moot point to argue whether the preparation of trainees in all the four Curriculum Studies modules is governed more by idealistic rather than practical reasons. Whether each trainee is able to perform reasonably well in teaching all these four subjects could only be determined once they are in school, a point to note in the assessment of the outcomes a few years down the road.

### **c. Curriculum Content**

The curriculum content component was designed for the purpose of preparing primary teachers to competently teach the subject content found in the primary curriculum. The curriculum content modules offered are required to be both academically rigorous and intellectually stimulating. In a sense the curriculum content component seeks to bridge the gap between academic subject modules which provide an in-depth study in the discipline and the curriculum studies component which in theory should make use of the knowledge base provided by the AS component. However, given that the AS modules are not taught with the primary school curriculum in mind, a curriculum content that offers a repertoire of knowledge base relevant to the primary syllabus is needed. However, in the light of the varied subjects ranging from English Language to Mathematics, Social Studies, and Physical Education it became apparent that no one model of CC would fit all these subjects. Some subjects like Social Studies and Mathematics are content-based while a subject like Physical Education is skills-based. In the case of English Language such a component has already been catered for in its CS component. There is also the fear that the CC might be misunderstood by different disciplines and in the process might become another AS component. Additionally, it would be difficult to teach the same CC module to trainees with different prior knowledge in the related academic subject. Different disciplines have grappled with these problems and have developed their own CC modules that will be

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<sup>10</sup> In all the initial teacher training programmes, all trainees with a B4 grade in any of the science subjects at O-level must offer SC3 Science. In the repositioned BA/BSc (Education) programme, all students are required to offer all the four CS subjects.

implemented in the repositioned degree programme. While it has been accepted that the CC would provide the foundational understanding of the subject for primary school teaching, and therefore has a place in the degree programme structure, the issues raised and fears are valid reasons for further deliberations and fine-tuning of the module. Because CC component has been introduced in the BA/BSc with Dip Ed 1998 revised programme, lessons learnt from one or two experiences (particularly in Mathematics) make such discussion and fine-tuning necessary.

**d. Professional Judgement Versus Pragmatic Demands**

From the above, there appears to be a tension between professional judgment and pragmatic demands to meet teacher shortages in schools. The teaching of all the four curriculum studies subjects is governed more by the need to have a teacher who can be deployed easily in schools than the trainees' competency to master all the four areas equally well. In general, there is likelihood that teachers will be asked to teach only three, rather than all four subjects in the primary schools. The same contention applies to the Chinese Language specialization. For pragmatic reasons again such as ease of deployment of mother tongue teachers in primary schools where there is a shortage of Mathematics and English teachers, such trainees are required to offer two additional CSs (Teaching of Mathematics and Teaching of English). This requirement which is still incorporated in the repositioned degree programme creates some anxiety among those Chinese Language trainees who may be weak in Mathematics or who are not bilingual. Their anxiety is well placed given the fact that they will be assessed in those CS modules they are weak in, as well as teaching practice in these two subjects over and above their teaching practice in Chinese Language which is their area of strength.

**e. Practicum**

Practicum occupies a crucial position in the teacher training programmes at NIE, and this is equally true of the degree programme. A pass in practicum is essential for the certification of trainees at the end of the programme. The issue of practicum has always been widely discussed each time a review of the degree programme is proposed. In the revised degree programme implemented in 1998 a total of 15 weeks - 5 weeks of observation and 10 weeks of teaching - was planned for trainees to be attached to either the primary or secondary schools in their third year of study. Under the 'total' teacher degree programme trainees were expected to spend time in both the primary and secondary schools but this was superseded by the revised model of 1998 which limits the practicum experience to either the primary or secondary school. The length of time spent in one type of school means that trainees would have longer practicum training than before. Also, in the revised and repositioned degree programmes, the semesters where there are significant practicum periods are better planned. For example, in the first semester of the third year of study, only 3 weeks of the semester is affected as two weeks of the 5-week practicum block fall within the university break but coincide with the beginning of the school term. In the second semester where there is a 10-week practicum block, no academic subject but only a couple of CS modules are offered, and these CS modules capitalise on the practicum experience of trainees in their assignments and projects. This model is retained in the new degree programme with some slight modifications as follows:

- the total length of the practicum is now 16 weeks instead of 15 previously and it is divided into 8 weeks in the third year and 8 weeks in the final year with PR1 carrying 7 Academic Units and PR2 9 AUs

- only the final year practicum is assessed while the third year practicum block is mainly for settling in schools, classroom observation, and some co-teaching with cooperating teachers

It is apparent that by opening the door into the new repositioned programme wider, the numbers of trainees in the degree programme will increase, and since supervision duties are expected in the other programmes as well, the demand on faculty will also correspondingly increase. Fortunately, a new 'school-partnership' model of teaching supervision has been tried out of a situation of necessity when NIE was requested to train additional intakes of the PGDE trainees in January 1999 and January 2000 (Wong and Goh, 1999). Going by the feedback obtained from schools and trainees, this school partnership model has shown to be effective in ensuring the desired outcomes to the satisfaction of NIE, schools and MOE. This model of practicum training with schools taking greater ownership of trainees could be extended to the new degree programme as well.

Despite what has been achieved so far, there always remains some nagging doubts about the sufficiency and efficacy of the limited exposure practicum experience when compared with the long stints that trainees are required to spend in schools in other countries such as in England and Australia. Whether the practicum experience in the new degree programme should in fact be extended and teacher effectiveness be enhanced merits further investigation.

#### **f. Diploma of Education Programme**

While the degree programme is being repositioned, a review of the Diploma of Education programme is also necessary given that the environment in schools has already changed. Another reason for the need to review the diploma programme is the need to dovetail the programme with the repositioned degree programme, as both prepare teachers for the primary schools, and the degree programme is the logical up-grading route for diploma holders. Although the Diploma of Education programme lasts two years, precisely because it also produces teachers for the primary school, its structure should not deviate from the degree structure in terms of the components that make up its parts. Also, by having greater correspondence between the two, diploma holders would be able to gain maximum module exemptions when they upgrade themselves in the degree programme. One area of contention, however, is the academic subject. The current Diploma of Education allows for two academic subjects, but with the reduction to one academic subject in the BA/BSc (Education) programme, it is likely that the diploma would also require one academic subject only. A frequently asked question, as far as the diploma of education programme is concerned, is, 'Should there be an academic subject exposure at all?' The argument that a teacher would be lacking in competency if he has no content knowledge means that the one AS is here to stay.

### **Conclusion**

The process of repositioning the degree programme in direct response to school curricular reform has taken almost two years, and the new BA/BSc (Education) will be implemented in July 2001. The review has taken into consideration the following factors: the changing educational environment in schools, the need for many more professionally trained graduate teachers in the primary schools, the wider pool of potential applicants with varied educational backgrounds,

changing entry criteria, and the aspirations of non-graduate teachers for up-grading opportunities.

Despite taking into consideration these many-faceted factors in the repositioning exercise, and the structure of the programme approved, the process of refining the new programme is by no means over. It should now focus attention on more detailed aspects such as content reduction, content overlap between modules, module assessment modes that encourage independent learning, interdisciplinary and integrated learning and project work, and many others.

In the medium to long term the efficacy of the programme and its various components to classroom practice should be evaluated. Obviously one cannot wait for many years before an assessment of its effectiveness is attempted. Constant monitoring of the new degree programme at the micro level by the Degree working committee, the Foundation Programmes Steering Committee and NIE itself is imperative to ensure that shortcomings can be identified early and fixed quickly. This programme monitoring may take the form of a continuous latitudinal and longitudinal research project as shown in Figure 1. At least five components that portray the essence of the programme are worth evaluating, constantly monitored and fine-tuned. Certainly, this is something the authors would like to see done in the context of the new Foundation Programmes Office.

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