Preservice teacher education curriculum development in Singapore has had to confront the problem of more closely integrating theory with practice. In an effort to do this, the foundational studies curriculum was established in the National Institute of Education in Singapore. Foundational studies covers a broad range of compulsory subjects, such as educational philosophy, psychology, sociology, and certain required academic subjects. The paper describes attempts to bridge the theory-practice gap, using three historical phases of teacher education development in Singapore as the framework. The three phases are: (1) pre-1972, dominated by a traditional training model; (2) 1973-1981, characterized by change and qualitative improvements in the training curriculum; and (3) 1982-June 1990, marked by an effort to integrate programs and the introduction of the practicum curriculum. The latest revisions to the foundational studies curriculum include development of a course, "Principles, Issues and Practices in Education (PIPE)." The course is designed to provide a firm grounding in the theoretical underpinnings of sound educational practices crucial to the development of creative and reflective teaching and responsible professional conduct.
One of the most vexing problems in preparing programs for professional teachers is the role played by the foundational studies (theoretical studies or core studies) in the pre-service curriculum. The content of most teacher education programs cover essentially three areas like (1) the basic foundation studies (2) the pedagogical studies or different subject matter expertise and (3) teaching practise. The last two elements are not subject to so much criticism and dissatisfaction as the basic foundation studies, whose place and purpose in teacher education have been seriously questioned. A desirable view generally held is that foundational studies must be directly and relevantly linked to classroom performances.

As in other countries, teacher education curriculum development in Singapore has had to confront the problem of more closely integrating theory with practice. In this paper, the formation of the foundational studies curriculum in the National Institute of Education in Singapore and attempts to bridge the theory-practice cleavage will be described against three phases of the development of teacher education in Singapore. These three phases are:

1) The early period right up to 1972, dominated by a model of
training that stemmed very much from the normal training curriculum.

2) the period from 1973 to 1981, characterised by change and qualitative improvements in the training curriculum.

3) the phase from 1982 to June 1990, marked by a concerted effort to integrate the programmes designed for different languages of instruction and specialisation, and the introduction in 1986 of the Practicum Curriculum. *(Sim and Ho 1990)*

The First Phase (Early 70s)

The structure and content of the curriculum for pre-service training for teachers in the early 1970s were based on three components - the basic disciplines or subjects which form the 'foundation' courses, the pedagogic courses or teaching methods, and teaching practice. This covers a broad range of compulsory subjects like educational philosophy, psychology, sociology and certain required academic subjects.

The second component covering the pedagogic courses or teaching methods were far from ideal or realistic. Insufficient knowledge about how pupils learn did not help much in developing effective courses on how to teach. The third component - teaching practice - was based on different supervision patterns, none of which approach the systematic manner and clinical emphasis which it demands. As a result, theory was taught without much relevance
It was quite clear that changes in the curriculum should be made and the whole curriculum was revised with the following taking place:

"1) Teaching practice was improved through the definition of terminal behaviours to be expected at the end of the course.

2) The principles of practice were to be drawn from the basic disciplines which would be studied as an integrated whole and not as separate subjects.

3) The methodology of teaching any subject was no longer to be divorced from the content of the subject.

4) To cater to special needs of schools each student has to study a co-curricular subject (PE compulsory).

5) Evaluation was to be diversified through the introduction of academic exercises, progress ratings and observation schedules; examination papers were reduced in number.

6) To improve general pedagogic skills, lecturers at the Institute will be required to return as teachers to school for one month each year to maintain their own practice and to keep in touch with the changing scene." (Wong R. 1973).
Second Phase (1973-1981)

During the second phase in the development of teacher education, more moves were made to improve the training conditions of teachers. In the training curriculum, emphasis was placed on improving trainees’ insights into the teaching process through disciplined inquiry. Trainees were exposed to national, regional and international issues. Their competencies in classroom management and communications were monitored through the meaningful use of educational technology.

A completely new model of teacher training (see Figure 1) was implemented. "The Principles and Practice of Education (PPE) course was reconceptualised on the basis of an interdisciplinary approach bringing together selectively relevant theories and concepts in the psycho-social and educational disciplines in studies related to classroom practice. The new approach stressed the interplay of theory and practice." (Sim and Ho 1990).

The thematic approach was adopted to be an ideal way to link theory with practice. Principles from the different disciplines are applied only when they are pertinent to the theme or sub theme.
"Specifically four main themes are used as the integrating framework as follows:

1. The Teacher and Teaching, which focuses on the teacher trainee becoming a teacher in the Singapore context and is concerned with problems and principles of being a teacher.

2. Content and the Curriculum, which focuses on provisions for the pupils, their development in all aspects with attention to their 'special needs'.

3. The Pupil and Learning, which focuses on the interaction between the teacher, the pupil and an educational content, the curriculum.

4. The School and Society, which focuses on the school in the wider context of society.

A team approach was adopted so as not only to ensure that the various topics cohere but also that theory and practice are inter-related." (Sim 83) In addition there was an effort to 'articulate' the different curriculum studies courses together and also to relate those courses with micro-teaching as well as macro teaching (or school teaching practice) experiences.

In the teaching practice component, secondary student graduate teachers were put on a teaching cadet scheme (1973-1978) teacher
The Primary student teachers (non graduates) studied full time with 20 weeks of teaching practice. Two major outcomes were apparent from this second phase in teacher education. Teachers trained for the primary level were equipped with specific teaching skills in all subjects and at the secondary level, the trainee teachers were specialised in two subjects. However the concurrent system of teacher training was most unsatisfactory as it imposed tremendous pressure on the trainees. Hence from July 1980 full time training was re-introduced for its preservice students.

Third Phase (1982-1990)

The third phase of the development of a foundational studies curriculum began with the recognition that "a major on-going offensive would be required to establish sustainable articulation between theory and practice" (Sim and Ho 1990).

In 1986, based on the unsatisfactory way in which the PPE course was structured along a thematic approach, there was a move to examine the traditional disciplines which underpinned some teacher training programs in the sixties. Specifically, the competency based model of the teacher training curriculum was
looked into and an attempt was made to focus what was essentially useful in these traditional disciplines.

One of the main objectives was to survey this huge knowledge base and investigate how certain areas can be extracted and sequenced to support the link between knowledge and number of important roles of a beginning teacher. The emphasis was not only on the student teacher's performance but on his/her reflective abilities. This is to be enhanced between a knowledge of the essential theoretical principles of teaching and the practices of specific teaching roles.

Out of this new conception, the Practicum Curriculum was formed. Essential knowledge base areas from the basic disciplines of History Philosophy, Psychology and Sociology were reconstructed so that the principles and practices are meaningfully woven together.

The entire pre-service teacher curriculum was revamped into what has been termed as the "Practicum Curriculum" by Sim. The focus of the new curriculum was on education as a process perceived through experience. The label 'Practicum' refers to the collection of all those practical experiences faced by the trainees in the lecture classes or in the school classrooms. These worthwhile experiences provide a rich base for them to develop and enhance teaching competence via a number of strategies.
Articulation between the main courses and relevance of experiences are still overriding considerations embedded in this curriculum. There are five major components of the Practicum Curriculum. (Figure 2)

1. PEP (E) Courses (Principles of Educational Practice)
2. PEP (C) Courses (Practice of Educational Principles)
3. ESE Courses (Educational Studies Electives)
4. CSO Courses (Curriculum Studies Options)
5. PD Courses (Personal Development Courses)

PEP (E) and PEP (C) are concerned with generic practices and principles whereas the ESE and CSO deal with the more specific competencies, spanning essential educational understandings and curriculum skills. Surrounding the Practicum Curriculum are a number of Personal Development Courses which are related to the other courses. PEP (E) and PEP (C) have been developed around the seven major roles of a teacher (planning, instructing managing, evaluating, socialising, organising and learning).

According to Sim, holding together the major components of the Practicum are FIVE "omnipresent, interacting generic elements" Content (C) Objectives (O) Students (S) Teacher(s) (T) and Environment (E). Each element is generic and could therefore refer to a variety of situations. The most important component of all is the Practicum ie the practice of teaching. The Institute works
very closely with the school to help provide relevant and specific teaching experiences for the trainees during the practicum attachment. All graduate teacher trainees go through two weeks of school experience and ten weeks of teaching practice and non-graduate teachers have two weeks of school experience and twenty weeks of teaching practice.

A number of training strategies were incorporated to develop teaching competencies. Training for both graduates and non-graduate student teachers has become full time. Key lecturers in the PEP(E) and PEP(C) studies are carried out on a team teaching basis. Tutorial systems are subject based, experience modules are included, and hands on workshops are run for media and computer education. For the Teaching Practicum component, there is micro teaching in the Institute and clinical supervision in the school. Pair teaching is introduced and the Assessment of Performance of Teaching (APT) form becomes the main evaluation instrument. It is envisaged that an important outcome will be the development of an informed and competent teacher with skills grounded in classroom practice.

The Practicum model however still lacks the integrativeness which is so important in teacher preparation programs. How well do principles and practices link up together in the minds and actions of the beginning teacher? Is the integration to be done external to the beginning teacher’s conceptualisation of the teaching process or should it be internalised and operationalised
by the beginning teacher himself or herself.

In a recent evaluation done on all pre-service programs conducted at the Institute, the Practicum Curriculum was found to be perceived rather unfavourably. (Wong et al 1990) Three groups of evaluators participated in the evaluation survey-planners, implementers and receivers (ie students) of the 86/87 and 87/88 intakes. According to the study the "theory and practice, of academic and practice linkage that the planners strutted so hard to maintain was somehow not appreciated by many student teachers as such. They even felt that, there was "discontinuity of topics covered" and that "practices PEP(C) did not coincide with principles PEP(E)"

In addition there were problems with getting the student teachers to put into practice the theories they had acquired at IE in their teaching practice. Some student teachers wanted the theory to be "practice-oriented" and to have "real life experiences and situations present in the school" brought into the lectures instead of listening to "ideal principles and situations". They had problems applying theories in their classrooms since only limited examples were given in the lectures.

In July 1990 two components of the practicum Curriculum PEP(E) and PEP(C) were combined and further refined into one foundation course known as PIPE-Principles, Issues and Practices in Education. The Practicum has thus become modified (see Figure 3) and the innovative move here has been to train graduates for both
secondary and primary teaching in the Post Graduate Diploma in Education programs. (PGDE-Sec and PGDE-Prim) Non graduates are trained in an upgraded program - the Diploma in Education (Dip Ed) program which requires them to study two academic subjects during the two year program, with the possibility of joining the BA/PSC program in 1993 should they have University entry qualification and have performed well in the Dip Ed program.

The PIPE foundation course is hence a refinement of the PEP(E) and PEP(C) components based on an integrative rationale. The delivery and assessment mode of the curriculum have been changed and to further enhance the integrative process, students teachers are required to go through the core curriculum period in the academic setting with teaching practices and debriefing sessions carefully interspersed in between.

This foundation course is designed to provide and equip students with a firm grounding in the theoretical underpinnings of sound educational practices, such as is crucial to the development of creative and reflective teaching as well as responsible professional conduct. Basic to the new programme are three essential characteristics of a beginning teacher which are to be stressed throughout the course. The beginning teacher is (1) well informed (2) competent and (3) reflective of the nature of his/her work in the school and the wider society.

With effect from July 1991, the following four year degree courses are introduced.
Bachelor of Arts with Diploma in Education (BA with Dip Ed)

Bachelor of Arts with Diploma in Education (Physical Education) (BA with Dip Ed (PE))

Bachelor of Science with Diploma in Education (BSc with Dip Ed)

Bachelor of Science with Diploma in Education (Physical Education) BSc with Dip Ed(PE))

The program will prepare candidates for teaching in primary schools. It will comprise an academic component where undergraduates will read two subjects in the Humanities or Sciences up to degree level, and a professional component where undergraduates will acquire the knowledge and skills required for primary school teaching.

Undergraduates who wish to read physical education as a major and be trained to teach PE in school may offer physical education and sports studies/sport science as one of the two subjects offered in the academic component.

In the four year degree courses the academic and professional are elaborated. Whether this separation of theory and practice, of academic and non-academic elements in teacher education will produce better teachers, remain to be seen. But it is highly probably that such programs will produce teachers who will be better educated and better trained. It will certify that the holder has achieved a certain level of knowledge, subject matter
expertise and a theoretical understanding of the various aspects of education.

It is recommended that throughout the teacher education program, the preservice teacher should receive teacher preparation in a setting that is as close as possible to the realities of the school. The beginning teacher should be given opportunities to work with each other and with teacher colleagues. For teaching practice in school, this means that situations have to be created in which student teachers can pick up experiences that are relevant for their beginning teachership.

The present foundation studies curriculum has thus come a long way since the early seventies. The recurring issue of theory-practice linkage was and is still being viewed and dealt with in a number of ways. Although a substantial effort has been made to close the gap between what is taught in the institute (theory) and what is needed for the practice of being a teacher, many problems still remain unsolved.
REFERENCES


Figure 1: Structure and Content of the Curriculum during the Second Phase

Whole curriculum

should build and nurture -->

Professional competence

which require -->

Theory + Practical Experience

to perfect skills in -->

Communication organisation of information and ideas, concepts, management and understanding of children and their needs

which imply studies in -->

(a) Psychology of human growth and behaviour instructional and learning behaviours human relations measurement
(b) Strategies in planning
(c) Methodology
(d) Uses of educational technology

Student's personal growth

Purpose + Motivation + Rationale + Satisfaction

Flan-
ning thinking
Critical Adaptabi-
ity and versatili-
sensitivity to
y and evalua-
situations

tion

(a) Philosophy of ideas-western and oriental
(b) Sociology of urbanisation and industrialisation
(c) Contemporary issues in education through comparative studies
(d) Local systems
(e) Special interest subjects
Legend: PEP(E) = Principles of Educational Practice
PEP(C) = Practice of Educational Principles
ESE = Educational Studies Electives
CSU = Curriculum Studies Options
C = Content, O = Objectives, S = Students,
T = Teacher, E = Environment