Polytechnic Education

– Moving into a New Era:

Views from the Ground

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1. Introduction

1.1 In 1990, this union held its 10th Anniversary with the theme "Changing Trends in Polytechnic Education: Implications and Challenges". In the 60s and 70s, the general public tends to associate Polytechnic Education with an education in engineering. By the 80s, the polytechnics began to expand itself outside of traditional courses into non-engineering disciplines, thus the symposium on the changing trends, its implications and challenges. In 2000, we held our 20th Anniversary Symposium with the theme "Polytechnic Education in the New Millennium". There are two very distinct factors that marked 2000 as entering a new watershed. These are the increased influence of Information Technology both as a tool in education and as an ever-increasing component of the discipline domain. The second factor is that students who enrolled in the polytechnics by 2000 were no longer educated under the old traditional Chinese system where respect for the elders and teachers were drilled deeply into their mindset. Hence, teaching staff need to rethink the way they treat the students and also have to be better trained in classroom management.

1.2 The early years of the new millennium were also years of economic volatility; hence in 2005 we have the 25th Anniversary Symposium on "Polytechnic Education – Key to Employability and Quality of Life". The aim of the symposium was to spread the message that there should be life-long learning and an education in the Polytechnics where skills and theory were given almost equal standings, prepared well students for life-long employability. This year we celebrate our 30th Anniversary and we have chosen the theme "Polytechnic Education – moving into a New Era" to explore the nature of Polytechnic Education in the years to come.

1.3 Today, the Polytechnics in Singapore are responsible for educating almost 40% of the post-secondary school cohort. Thus it is important for teaching staff in the polytechnics to have a clear idea of the role they are going to play in the next few years. To this union, we see our role as teaching staff greatly influenced by the impact of changes in technology, changes in social behaviour and the interaction between technology and social behaviour.

2. Advances in Technology

2.1 Advances in Technology affects teaching staff in three aspects namely discipline domain knowledge, course delivery and workload. A teaching staff has to keep abreast of changes, new developments and trends in his/her own specialized discipline. This can be achieved by reading journals pertaining to one's own discipline, conducting research, attending conferences, go for courses, study trips, joining professional bodies as well as adopting current textbooks for the courses one is teaching. Increasingly staff kept themselves updated by accessing the web sites of the relevant professional bodies and participating in on-line forums. Due to an ever explosion of new knowledge, keeping oneself updated demands a lot more self-discipline and time, which by itself is usually in short supply.

2.2 A teaching staff also has to stay ahead of the new pedagogy and course delivery tools make available and popular by technology, especially Information Technology. This entails proficiency in using mobile eLearning software and teaching methods. As an example, teaching staff in Ngee Ann Polytechnic now has to put his/her module (i.e. subject) in the Ngee Ann Polytechnic mobile eLearning portal (known as MeL – which is based on the BlackBoard software). Teaching staff are also expected to exhibit expertise in using eLearning Delivery methods such as on-line quiz, on-line chat, on-line discussion forum, etc. Technology advances demands that course delivery be more learner-centric, more interactive, more interesting and more customized to the needs of the students.

2.3 For Engineering courses, technology advances also means that the teaching staff spend more time on the computers rather than on the physical workshops. In the 1980s and early 1990s, it is easy to differentiate an engineering student from a non-engineering student because engineering students are required to carry with them T sets and drawing papers for their technical drawing as well as aprons and overalls for their engineering workshops. Today, no students carry T sets and drawing papers as these are now replaced by computerized drawing and imaging software. Also engineering workshop hours for students (and staff) are reduced and replaced by working on computer software such as CAD/CAM, MATLAB, etc.

2.4 Technological advances in office automation software also means that teaching staff are now expected and required to do a lot more administrative work on their own. Hence teaching staffs are expected to have quite a good knowledge of office automation software in order that they can on their own, be able to prepare their own teaching materials as well as type and format examination questions (and other teaching materials) meeting the standards set.

3. Changes in Social Behaviour

3.1 Societal values changes with time, existing preferences and practices become passé, turned old and get replaced. Here, we would like to concentrate on two trends of social behaviour that in our view has and will greatly affect Polytechnic Education in the coming years. Firstly is the change of behaviour of the students (and their parents) who

enrolled in the Polytechnics and secondly, the switch of preference amongst students (and their parents) from the hard-sciences and hard-skill engineering courses to the social sciences and soft-skill courses such as business, mass communications, psychology and humanities.

3.2 Students enrolling in the polytechnics now tend to have modern (same will term it as westernized) values. They tend to be more expressive than disciplined; have more faith in their pre-conceived opinions rather than believing whole-heartedly in what is being taught; less likely to respect authority and demands more freedom. What it meant to teaching staff is that respect for lecturers is not a given, it has to be gained. Lecturers have to treat our students more as "friends", be more caring and provide lots more pastoral care than what we have done twenty years ago. Treat them as our friends first, and then they were become our students.

3.3 The preference for non-engineering courses had grown during the last ten years, in fact now it is common to hear secondary school students expressing their "hatred" for engineering courses. It is not difficult to know the reasons. Secondary schools students have the opinion that engineers work hard in tough environment, faced heavy responsibility and earn low salary. They do not want to see themselves in such a condition after graduation. Parents think that students in engineering have no prospect in Singapore as factories are moving out of Singapore all the time. Such a social change coupled with our education policy on allocating polytechnic courses based on merit, (i.e. the grades a student obtained in the "O" level exams) has resulted in Business and non-engineering courses attracting much better students. Thus engineering courses ended up with students having relatively poor "O" level grades and this has made teaching of such students much more time-consuming and challenging. This is further aggravated by the trend that an increasing number of students enrolling into engineering courses claimed that they don't like engineering, that engineering is not their preferred choice and frankly they don't know why they are in engineering especially when they have obtained poor grades for mathematics and science. The challenge now and in the future for staff teaching engineering is that the horses are already by the river, how do we make them drink the water whose taste they do not like!

3.4 On the academic front, parents and students have began to look at polytechnic education as an alternative to junior colleges and would rather continue with the universities right after graduation rather than joining the workforce. Thus, is it still right to call polytechnic education pre-employment training? Looking at the views of the parents who send their children to the polytechnics, the polytechnics are more matriculation centers! To them, polytechnics are like pre-university centers and we are doing a very good job at that! Hence while polytechnics courses are set up to meet industrial and workplace needs, many students, especially the better ones regard it as good preparation for studies in the universities. As Singaporeans get more attuned to having a better life, the proportion of students wanting to continue their studies in the universities right after completing their courses in the polytechnics is growing all the time.

4. Interaction of Technology and Social Behaviour

4.1 In the 60s and 70s the dominant entertainment medium in most homes was the radio, in the 80s it was the television; the 90s was the age of MTV and videos and now the dominant entertainment media in the homes are the microcomputers and its associated world of cyber and virtual space. Students brought up in the 60s and 70s had good attention span and are adept at making images out of listening – hence the use of lectures where voice is the main communication medium worked well then. By the 80s and 90s, listening had given way to both listening and viewing, hence the term audio-visual. In today's environment, it is the world of customized interactive audio-visual. Thus today's students often appeared sleepy in classes not so much because of the toll of homework but more because of burning midnight candles in the virtual world of internet games, facebook, youtube, second-life and blogging. It has become more difficult to get students to give their studies the attention it warrants and teaching staff has to make their assignments and projects more "fun" in order to compete with the virtual world for the students' time and attention.

4.2 If education is the teaching of what is right and what is wrong; what is acceptable normal behavior and what is unacceptable deviation, then the existence of virtual communities has made such differentiation irrelevant. To belong to a virtual community, the members must share common values, goals and life-style orientation. Those who do not have the same sets of values, goals and life-style orientation would not join, or if they join would be ridiculed. Thus students who joined a virtual community that glorified smoking would take smoking as normal behaviour and would consider non-smokers as deviants. How then should we handle such cases, how do we explain (assuming they want to listen to us) that the views espoused in their virtual community is the view of an extremely small group of people with hidden agenda? These are challenges which teaching staff has to face with increased frequency.

4.3 Technological advances have also greatly impacted the workplace and increasingly more workers felt the need to be retrained with more advanced or newer skills so as to stay relevant in the workplace. Increasingly employers also take the view that better and more skilled workers give their companies added competitive advantage in this globalised economy. Thus in the years to come, the polytechnics can expect more working adults coming for skills upgrading and acquisition of new skills.

5. Impact on the ground

5.1 In the United Kingdom, Australia and New Zealand, the nature and scope of skills training is mainly lead by a specific industrial cluster or a trade guild. In Singapore, with the setting up of the Workforce Development Authority (WDA) and the Workforce Skills Qualification Framework (WSQ) positive attempts have been made to get industries to play an active role in determining the scope and nature of skills training. What is the impact of WDA and WSQ on the polytechnic teaching staff? To this union, we can see two major impact – firstly the involvement as trainers and secondly the acquisition of skills to be trainers. The need for trainers is obvious – it is to meet the

expected increase in demand for continuing education and training. The need for polytechnic teaching staff to be familiar with WSQ is because the training methodology and assessment requirements of WSQ are very different from that used in awarding of polytechnic diplomas. (Note: Details of WDA and WSQ can be found at the following website: www.wda.gov.sg).

5.2 In this paper we have attempted to examine what the polytechnic teaching environment will look like in the next few years and how teaching staff can prepare themselves not only to meet the new challenges but to gain competitive advantage from being able to stay abreast of new developments. Technological advances and changes in social behaviour will mean that lecturers like any other workers in Singapore will have to embrace themselves with continuing education and training. Apart from fulfilling the rigorous demands of the official job descriptions (JDs), teaching staff will be also have to be innovative and creative in coming up with solutions for:

- motivating disgruntled students in courses which they rather not attend;
- competing with the virtual world for the attention of the students;
- guiding , comforting and counseling students troubled by stress and social disorders;

5.3 The nation, we believed, have high expectations of the polytechnics and its staff to deliver on their mission of preparing, training and educating Singaporeans so that our workforce are competitive, high in productivity and stays employable. Will the teaching staff be able to meet such high expectations? Experience has shown us that some will exceed the expectations, the majority will be able to meet them with effort, and some of course will have difficulties. Our role in the union firstly is to work with management to ensure that our members are given the necessary training and tools to do their job well. More important, the union must have the trust of its members, so that members will come forward to give us feedback not only on how to improve the work environment but also to alert us of the problems and stress they faced. With such knowledge, the union will be able to raise alarms both with management and the union communities to ensure fair play and to help alleviate and lower the stress and anguish of members in meeting the high expectations set.

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