

ICT in Thai Education

Ideological and Structural Determinants

that Support its Development, Introduction and Use

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ABSTRACT

It is the main thesis of this paper that teaching practices in education in Thailand is set to undertake major change as technology affects how and what is taught. This paper explores what are considered important issues regarding the management of ICT in the Thai education system and assesses the importance of ICT in education; the meaning of technology; attempts to appraise the impact of computers, teacher/lecturer and student attitudes to technology in education; discusses the possible affects of access to technology and constructs a basis for realizing the purpose and use of technology in the classroom and further raises some issues relating to technological literacy.

บทคัดย่อ

เทคโนโลยีสารสนเทศและการสื่อสารมีผลให้เกิดการเปลี่ยนแปลงเป็นอันมากเกี่ยวกับเนื้อหาสาระ การเรียนรู้ และวิธีการเรียน วิธีการสอนในระบบการศึกษาของไทย บทความนี้พยายามจะเสนอประเด็นสำคัญๆ เกี่ยวกับ ความสำคัญ ความหมาย การจัดการเทคโนโลยีสารสนเทศ และการสื่อสาร ผลกระทบของคอมพิวเตอร์ ทัศนคติของผู้เรียนและผู้สอนที่มีต่อเทคโนโลยีสารสนเทศและการสื่อสารทางการศึกษา รวมถึงพยายามอภิปรายถึงความมุ่งหมายและผลกระทบอันอาจจะเกิดขึ้นในห้องเรียนจากการใช้เทคโนโลยีดังกล่าว ในขณะที่เดียวกันก็พยายามชี้ประเด็นสำคัญเกี่ยวกับความเข้าใจภาษาของเทคโนโลยีสารสนเทศและการสื่อสารด้วย

INTRODUCTION

Information and Communication Technology (ICT) in Thai education has become a mainstream educational focus - with the Thai government spending at least (proposed) 400 million baht per year from 2002 (Sensai, 2004). ICT provides the

*most obvious example of the nature of the evolution in educational provision (Johnson, 1998). Despite the rapid increase in computer use in society - and in education in particular - and the availability of Internet access and development during the late 1990s, there is still a formidable gap that separates the major sections of Thai society - with the people who have money having the largest share of technological use and access opportunities. However, children who may already be disadvantaged are the least likely to have access to this new technology. Children and adults living in poor families, and particularly those living in high-poverty districts are the least likely to have a computer at home or access to the Internet or even have the opportunity to use a computer at school. Unesco (2003a) further supports this view in that *through ICT, disparities in educational access and quality can be reduced, and education systems can enhance the knowledge and skills of their learners and promote creativity, critical thinking, and learning how to learn. Complementing this view, Webber (2003) indicates that for schools and other educational institutions ICT can transform the way that education is delivered and open the way to a new pedagogy. It can make it easier for teachers to plan and find high quality materials, and it can help pupils to find out more about the subjects that they are studying. Critically, new technology can enable teachers to tailor their teaching more closely to the abilities of individual pupils.**

It is the main thesis of this paper that teaching practices in education in Thailand is set to undertake major change as technology affects how and what is taught. This paper explores what are considered important issues regarding the management of ICT in the Thai education system and assesses the importance of ICT in education; the meaning of technology; attempts to appraise the impact of computers, teacher/lecturer and student attitudes to technology in education; discusses the possible affects of access to technology and constructs a basis for realizing the purpose and use of technology in the classroom and further raises some issues relating to technological literacy.

WHY IS ICT IMPORTANT TO THAI EDUCATION?

As long ago as 1980 Bork (1980) suggested that *we are at the outset of a major revolution in education, a revolution unparalleled since the invention of the printing press. The computer will be the instrument of this revolution...By the year 2000, the major way of learning at all levels, and almost in all subject areas, will be through the interactive use of computers.* Whilst the use of computers is common place today in education this prediction is nevertheless as important then as it is today. The major difference today is that perhaps we should take this more seriously as the revolution appears to be happening – at least if the rhetoric from the newspapers are believed (for example, Waltham 2002).

There would appear to be a natural framework for the development of ICT in Thailand education which is being made indispensable by government agencies through the need for ICT educational reform. This developing ICT framework is underpinned by pedagogic/technological and political/legal designs that together create a powerful influence on ICT introduction and use in Thai education. For example, this importance is enumerated and sustained by the Office of National Educational Commission (2001) who elucidates that *as technology is a crucial means for improving the quality of teaching and learning, its role has been emphasized in S63-69 of Chapter 9 of the National Education Act.* Thus, the Thailand government appears to apply the political/legal imperative to ensure that Thai citizens become, not only aware of ICT and its promises, but also places responsibilities on teachers/lecturers and administrators within educational institutions to undertake to apply ICT in an appropriate way – and always to the benefit of the Thai people.

Technology can and does provide more scope for teaching and possibly even more importantly for learning. Research has indicated however, that classroom take-up of technology has been limited and may remain limited for the foreseeable future (notably Bliss, Chandra and Cox, 1986; and McCormick, 1992). A British government report suggests that classroom use of technology amounts to 20% of available teaching time, but the report does not indicate the relevant quality of this or the focus of the use of such technology (DES, 1989b). In Thailand this may reflect the growing need for ICT literate teachers (Narongsak, 2004).

Technology may have progressed to a point where it can be considered to be a useful tool in the learning environment. But why hasn't ICT become more prevalent and more useful as a tool of communication? Is it the technology itself, teacher skills or the organisational strategy? Some research suggests all of these. For example, McCormack (1992) and Wild (1991) intimate that the major cause is the failure to develop an whole-organisation approach to ICT strategy which takes into consideration learning, teaching and administration

aspects of education. This in itself has repercussions for managing schools as well as for managing classroom environments. When considering the classroom, much research tends to focus on the inadequacy of teacher skills when using technology in the classroom (for example, Heywood and Norman, 1988) and not on how best the technology can be managed. Here, research by Bracey (1988) suggests that a more effective strategy would be to ensure that new lecturers/teachers are ICT aware and above all else, trained to use it in the classroom in both a positive manner and one in which students can progress in order to be able to use ICT tools to help them in their own learning capacity. This strategy then would effect a grassroots development so that newly trained teachers or lecturers would not appear unfamiliar with classroom technology (Wellington, 1990) and would not encounter ICT in isolated packets of activity that could be seen as marginalising such technology to highly controlled classroom activities with little opportunity for learner innovation or creativity (based on Dunn and Ridgeway, 1991). The Thailand government provides some form of asserted help in this regard, but with limited resources and a wide-field of coverage, such developments are unlikely to provide the completeness required until at least 2005 (Wiboonuppattum, 2003). A recent sample survey suggested the following issues for Thai educational professionals to contemplate (Unesco, 2003b):

- 1) *Much of the current use of ICT in the classroom still focuses on the drill and practice type of learning*
- 2) *There would appear to be an inadequate basic infrastructure*
- 3) *Lack of technical support*
- 4) *Integration of ICT in the teaching of subjects has been weak*
- 5) *The absence of policies and management support*

ICT therefore, although useful may appear to bring complex problems that the Thai education system must address to effectively use it.

There would appear to be a variety of ICT related imperatives. These are the:

1. *Teacher/lecturer imperative* - to remain abreast of technological changes that will affect student learning, educational administration and society in general
2. *Learner imperative* - to expect training and education in technological developments so that they are not deprived of opportunities in later life – at university or work
3. *Societal imperative* - To generate enough able-bodied individuals to take advantage of technological developments and meet technological requirements
4. *Technological imperative* - to develop appropriate technology that enhances the learning environ-

ment and the learning capability of the learner and the educational provider

These imperatives, whilst useful in framing the character of technology development, also provide an all embracing theme-set for technological understanding in this complex world we call education.

Do we, as educators, embrace technology because the technologists have some form of technology available?; or do we embrace technology because it is useful to the learning environment? It would seem that the only criterion is that technology must be useful to *both* the learner and the teacher/lecturer - but how useful should this be?

WHAT IS TECHNOLOGY?

Technology can be viewed as encompassing many aspects of the teaching process within and outside of the classroom. Technology can also be *emphasized as a means of dealing with interrelated and complex problems of educating and developing people to their full potential* (Lockee, 2002). So this means that not just technology for itself as an artefact or tool - which has been the prevalent view for many decades - but more importantly to assist in the development and support of the educational process also. Technology may be used to harness good educational process or it may be used oppress the emancipation of technological ideology, theories and concepts that could enhance learner abilities. Technology may also be considered to be used by management to monitor, raise and support quality initiatives that effectively bring out the best for all concerned in educational pursuits. This therefore carries some implicit characteristics of technology used in Thai education with notions that technology appears to be contemporary, future oriented, inevitable, systematic, efficient, politically relevant and above all else, trustworthy. However, as technology use becomes more visible its primary use has been as a tool, where it is considered objective, politically neutral, and devoid of social influence (Penny, 1984).

Good use of technology - both inside and outside the classroom - appears to engender an exciting opportunity that endeavours to bring education into forefront of changing practices. The type of technology used may indicate the culturistic orientation of management, as it is management who control budgets and institutional strategy. However, technology could and perhaps should be seen as an extension of the social climate in which the technology is introduced. This means that technology itself, although arising from a given culture or managerial order, can influence change in relation to what the technology is capable of doing or being used for. Although technology may be considered as apolitical (Penny, *ibid*), it would seem prudent that it should not be viewed as such. However, this does not seem to be an innate condition of the technology, but

of the social processes surrounding its introduction and use. It is the political and consequent power base that is the focus of much educational technology and affects the distribution of power in institutions (Lazerson et al, 1985). It is just this that creates the notion of technological determinism - a precondition that naturally confers educational technology as a unified substitute for the fluid labours of educationalists and learners.

Technology can be viewed as being represented by three aspects - mechanical, process or power based. In the *first*, technology is seen by many as being represented in the mechanical aspects (hardware) or machine related icons which support the educational process. Unfortunately, technology can be seen to take on *a will of its own* and become the focus, rather than support of this changeable educational process. *Secondly*, technology is also seen by many researchers as embodying the development of goals and methods - and the management of those goals and methods - to solve a problem. This is the process view of technology development. *Thirdly*, some researchers view technology in terms of the extent to which it helps managers develop educational tasks that simplifies the educational process.

Technology in Thai Education

Within the context of this paper, educational technology - in its many forms, guises and usage's - is considered to be central to assisting the application and management of quality within the Thai classroom. It is assumed that it does this by attempting to provide a means for enhancing the educational process. However, research by Poh-Kam Wong (2002) indicates quite clearly that the rate of diffusion of ICT in the Asia is well below that of Europe. This suggests that the development and use of ICT in the Thailand education system could bring about specific technological issues that are not yet well identified or assessed - since South Asian countries *are struggling to come to terms with the challenges of the information age* in the case of the digital divide, as the *...rapidity of ICT development also exacerbates the problems of those without access to ICT...*(Tipton, 2002).

Central to the issue of technology is just what it is that educationalists have a need for? Is it to process, build, entertain, judge or just to provide a political power base? It would seem that it is all these and more, and the opportunities are set to increase - not decrease - if *we* undertake the social engineering task to accept, test and attempt to master it. Technology does not appear to be accepted per se, as if part of a greater entity. Accepting technology without thinking of the consequences or impacts on educational endeavour will perhaps lead to education being run by technologists, not educationalists (Apple, 1986). On this point, Laurillard (1993) suggests that resistance to the development of new

technologies may actually be quite good, as it has already been demonstrated that new technologies are easier to develop than changing cultural and educational values and behaviours. Paradoxically, this is perhaps why educational managers and politicians seek to harness the power of technology. Hopefully, there is no longer any requirement for the *impatient* premise that the value of technology is at all self-evident since there is now a more significant body of research findings which support ICT's usefulness in education (based on Wellburn 1996; and Poppen and Poppen, 1988). These studies therefore also help us answer the important question: *just what is it that educationalists have a need for?*

Sometimes technology appears to be looking for a problem, rather than assisting in the provision of a solution as *it is becoming apparent that the type of learning that technology best enhances is difficult to quantify* (Wellburn, *ibid*). Although there are many researchers that indicate we now have an improved understanding of how to maximize the benefits of ICT to learners and teachers/lecturers through a variety of technology resonant educational environments (Wellburn, *ibid*).

Thus, technology should not be viewed as a means to an end or an end in itself. However, it appears that a predominant outlook over the past 20 years is that of the focus of educational activity - possibly through convergence processes likened to standardisation which links performance attributes and outcomes of the technology strongly with the performance outcomes of the educational process. In this, the limitations of technology seem to underpin any consequent limitations relating to educational performance. Consequently, the political impact of such technology can appear to restrict, rather than liberate, such educational endeavours (Laurillard, 1993).

Using technology can potentially mean the substitution of labour with capital or the substitution of expensive labour with less expensive, perhaps less knowledgeable, labour. In Thailand this would perhaps be an interesting side-outcome, as White (1983) suggested, *any teacher who can be replaced by a computer deserves to be*. This appears to be a method used by educational management through their efficiency activities. Multimedia development and use can be seen to effectively automate the lecturing/teaching process and substitute the many expensive up-front teachers/lecturers with essentially a smaller number of expensive, centrally controlled design personnel.

At the interface therefore between lecturer and learner there appears to be in effect a de-skilling approach (Braverman, 1974). Braverman (*ibid*) also suggested that throughout the Twentieth Century there has been a *progressive de-skilling*, of jobs that are *increasingly devoid of intrinsic content, routinised and mechanical*. This argument has been countered by researchers in America and elsewhere, that in fact up-skilling has occurred - not de-skilling. It can be argued

that where any new skill is learned that it adds to the personal repertoire of the individual; and that individual carries that skill wherever he/she goes (Based on Taria, in Littler, 1982).

However, as far as educational technologists appear to be concerned, the media produced can be utilised time and again - in the same way - thus increasing the basis for standardisation and institutional efficiency. Consequently, those using such technology may be able to transfer the cost of production further up the development line towards the technologists (Beynon and Mackay, 1989). Nevertheless, this media is a constructed reality and the technology encapsulates this *truth* as such. This results in increasing power being given to the educational technologists in which it appears to suggest the notion of *what can* be achieved, rather than *what should* be achieved (Woods, 1982). This educational technology is not responding to the changing needs of Thai education, but rather Thai education is being changed by what educational technologists can do - a limited focus in terms of timeframes and also technological developments.

Technology can end mass-education in the sense of providing individualised offerings that are considered more meaningful to the individual, rather than society. In this sense, mass-customisation of educational process, with specific emphasis on individual needs may be very useful. However, the main flaw with the application of this approach is that the societal and cultural predisposition of the Thai education system directed to provide mass-education seems to create a psychological burden that individuals may feel difficult to break. An extension of this argument is that paradoxically, although technology concentrates on demanding a standardised educational process, the outcome can be differentiated to meet different and changing learner and teacher/lecturer needs (Bates, 1991). This task appears to have been given to the educationalist, but only validated through the educational technologist.

The aim here is to explore the managerial and educational context for using technology in Thai education. The proposition is not to explore technology itself, but the veritable social, political and cultural impacts that are deemed to be associated with its design, development, introduction, use and evaluation. Extraordinarily, technology has been assumed to be needed in education in order to mirror development in industry and commerce. That is, staff and students appear to become more accustomed to the actual benefits of technology development and use. This can be argued as relevant only to managerial preoccupations of power and efficiency, as education itself is being squeezed by the very external market forces that subsume much of industry and commerce. Further, teachers/lecturers controlling learner access to technologies (for example, by using or not using current technological techniques to enhance their teaching process) enhance or denigrate

the benefits that could be achieved and appear to do little to support learner confidence in their educational pursuits and orientations. It thus becomes a sort of learner lottery, where some students benefit from the use of technologies in the classrooms and other students do not. Unfortunately, this also reflects funding issues which are predominantly controlled by the Thai government, and where technology is seemingly priced out of many schools and universities – irrespective of the benefits that could accrue through its use.

The Ideological Basis of Educational Technology

The ideological basis for the use and possible abuse of educational technology does not seem to be very clear. This raises issues of whether computer technology should be considered an ideology of learning, rather than a specific technical discipline devoid of the need to consider the educational environment in which the technology is placed? There appears to be a paradox here, as individuals who hold power consider technology to be value-neutral, whereas the individuals who resist the educational technology introduction consider it value-laden - the values of the powerful and influential (Robins and Webster, 1989).

The introduction of computers and other high technologies into the Thai classroom appears to mask the underlying educational concepts and political agendas associated with their inception, construction, use and control. The introduction of technology seems to bring to some an almost passive acceptance of it, as if part of an inescapable evolution or innovation (Young, 1984). Some researchers argue that this kind of introduction of technology creates a sort of social corruption that appropriates critical knowledge surrounding educational technology, in order to validate its introduction and use (Giroux, 1988). This argument has grown in favour in some quarters, especially as the increasing use of higher technology pervades business and commerce. The sensible approach, according to them (Giroux, *ibid*), is to ensure that students take on board the basic skills, knowledge and behaviour required by commercial operations and it is here that Hough and Ellis (1997) suggest that students saw the development of IT skills as an essential asset when seeking employment. Therefore, introducing and using technology to them appears almost inevitable and inescapable through processes associated with, but not limited to, technological determinism. Another approach could be to increase the learning mystique by introducing inanimate machines - that are considered at the out-set value-neutral. This is perhaps the outcome of the application of the efficiency orientation and thus could be seen as the dominant technological ideology in today's Thai education system.

Competing standpoints of educational technology suggest orientations that include:

1. Technical knowledge about computer components and computer skills development
2. Utilisation of computer technology as tools in support of the educational delivery process
3. Impacts of computer technologies on the learning process

When considering (1) and (2) above, it appears that with educational technology the skill level required to use them is lowering. Consequently, the educational basis for all the above three orientations are becoming less crucial. However, the impacts of the technology is increasing - especially in (3) - the learning process (Halal and Liebowitz (1994). For example, resistance to computer technology appears to have been recognised and much of the effort of introducing computer technology has resided with the need to develop some sort of *psychological comfort with and acceptance of the technology and the need to apply it* (Penny, 1984). The basic technological ideology adopted by most people in Thai education appears to relate to the first above (1) (Verity, 1994). This perhaps involves a short-term human or emotional capacity as the approach is easier to capitalise, manage, and administrate. There is also the suggestion of a sort of social conditioning or expectancy, where educational technology is subsumed into the fabric of the local community. Unfortunately, the cost of such technologies has created a technological divide which is quite marked in Thailand as universities and schools with available resources tend to introduce technology more swiftly and more broadly than schools or universities who cannot afford such occurrences.

The second above (2) relates to using this technology as a tool towards developing other things. For example, Hough and Ellis (1997) affirm that *'...As a result many teachers are developing other skills which are impacting on the quality and presentation of their teaching materials...'* Here the physical icon of the presence of the technology itself is perhaps an immediate concern as newer technologies suggest better teaching practices and a closer student learning focus.

However, the third above (3) relates to the integration of the previous two approaches, where the basic orientations appear capable of being modified into a vocational (traditional) or a developmental (contemporary) focus. The latter aids (1) and (2), whereas, the former aids (3). Even in the 80s as is the case now, it is firmly to the developmental approach that the major opportunities for educational technology appear to be orchestrated (Laurillard, 1983). The developmental approach offer learners what is perhaps considered important to their cognitive and affective development. This is conceded to contrast sharply with the vocational orientation that appears to stress job related requirements that in some cases, bear little on the needs of the actual learner. It is therefore all the more understandable that pressures are brought to bear by

powerful external stakeholders to ensure that the vocational orientation takes precedence. Schools and universities therefore tend to become a little pre-occupied with job related skills and knowledge development and possibly not enough attention is given to individual cognitive and affective requirements.

What makes an individual want to use or resist the development and introduction of educational technology? There is some indication that some people just do not feel that using such technology assists them in their daily duties, as if the technology was deemed inappropriate to the particular educational circumstance. However, this approach may be considered internally focused, perhaps towards a hidden inadequacy or confidence. Thus, personal lecturer/teacher preoccupations conflict with learner (student) requirements and needs. Perhaps this attitude could be considered rather healthy, as resisting technological determinism means that more time is given to assessing the actual reality of the future needs of learners.

Arguments for the use of educational technology indicate that it usually revolves around the discrimination and development of new skills and knowledge that are considered necessary in the wider community. Perhaps of interest here is that proponents of the information age appear to suggest that core skills may not be in great demand, as the number of jobs that require these skills will decrease, rather than increase. This contrasts directly with Dublin (1990) and Apple (1986), as their analysis of vocational trends points to a different future. Significantly, job skills and job numbers are likely to decrease, as the level of technological capability increases (Aronowitz & Giroux, 1985). Thus, it would appear that more use will be made of technology, as these schemes can be fully capitalised. However, the core of technology use in society at large, provides mediocre and generally very low skill levels to operate automated machines - just check any supermarket pay-out desk. Consequently, the pedagogic argument for this type of vocational learner development loses much of its validity and potency. Here, user friendly means fewer skills required and thus demands on training facilities. So the supporters of technological determinism in Thai education cannot effectively use the argument of technological inevitability as the basis for constructing a future that is inescapably linked to technology.

Simple Definitions of Educational Technology

Educational technology appears to mean the:

1. Development and use of physical and mental entities that are disseminated systematically in order to continuously enhance the learning and teaching environments (human element)

2. The systematic development of equipment, materials, methods, and processes that continuously bear to support the educational context of learning (physical element)

The above two definitions attempt to indicate the integrated nature and basis for the development and use of educational technology in contemporary educational circles. This illustrates the application of the systems approach, as developed by Kast and Rosenzweig (1979). Here, a system can be closed or open, and constitute interdependent parts that together operate to increase the functional output than would otherwise be achieved individually. Changes in one part of the system, affect other interdependent parts in the system. For example, changes in resourcing requirements, can affect the teaching involvement of the lecturer/teacher.

The above two definitions can also be contrasted by that provided by NCET (2004) which suggests that educational technology is the *development, application and evaluation of systems, techniques and aids to improve the process of human learning*. However, this definition can be viewed as appealing to a much wider scope of educational operation. It is therefore very general, as it is unfocused, in that any aspect of learning is accommodated. However, a common theme appears to exist and that is improvement. Improvement of material, physical equipment and aids, methods, educational processes and managerial functions. Thus, quality management and educational technology appear to be in unison in this common theme and focus and therefore the Thai education system could well be advised to possibly link both educational technology development and classroom quality practices in order to ensure a useful educational premise and platform.

Components of Educational Technology

Educational technology seems to include two major components (Based on Race, 1989):

1. Physical equipment and media used in the educational process

2. The managerial procedures adopted in order to ensure the efficiency and effectiveness of the educational process educational strategies offered - short and long term

It would appear that some educational practitioners may support the first, while others may support the second view. Managing one aspect, without considering the other, may be perhaps divisive. However, it is assumed here that an all round approach requires the consideration of both aspects, as changes in one, affect the other. Although a dualistic intention conceals a sort of symbiotic approach.

The effects of the pursuance of component 1

Much of the technology development in Thai education appears to revolve around the sphere of the physical equipment and consequent media use. This could be considered to have resulted in a somewhat biased process that has yielded gains that can be seen readily as visible icons of the contemporary orientation of Thai education. It seems that considerable resources, time, and effort may have been expended in order to develop effective measures that ensure the objectives and practice of the education process are met consistently and effectively. However, the focus has been on the *what* of education, not the *how*. Consequently, this development of technological aids to the educational process has perhaps taken a direction of its own. A direction that signifies a form of self-importance that is somehow difficult to shake off.

Much of this direction appear to have resulted in this educational technology being seen as a necessary aspect of teaching and learning, as it is assumed that without this technology there is none. However, technology development does appear to have followed a pre-determined path and could be considered remarkable in that possible standardisation practices in its use has taken such a long time to achieve.

The effects of the pursuance of component 2

With increasing technology development, it would appear that the educational processes and managerial considerations could exploit a more effective determination by:

1. Enhancing the learning environment, and the flexibility of educational provision
2. Reinforcing the learning ability of students, and their learning independence
3. Increasing the efficient use of resources-human, physical and capital

Technology may have helped Thai education to develop its ideology, practice and process and become richer as a result. However, in order to be used by educational managers the use of higher technologies may have advantages over other technologies but *should be invisible* to the educational process (Hopper, 1988).

INSTITUTION/TEACHER OR LEARNER CENTRED APPROACH?

The Teacher/Lecturer Centred Approach to Education

This approach is considered to be the traditional approach to the provision of Thai education. The

structured basis - which seems inescapably related to power and control notions - provide the educational environment in order for students to learn. The varied scope of the programme offerings indicate the educational depth and orientation of the institution. In this approach the institution's basis for operation appears to be the need to standardise managerial systems and processes, and balancing this against programme requirements. Decision making in regard to the programmes offered seem to revolve around organising the structure and content (including quality and assessment procedures), determining and allocating staff, evaluating necessary rooming and other physical resource requirements. The structural orientation of the institution seems more biased towards efficiency - managerially, economically and functionally. Funding is considered contingent on ensuring adherence to developed rules, procedures and processes in order to achieve stated learning objectives.

Student learning strategies appear to take second place to what the institution can anticipate, develop, implement and utilise. In this respect, student learning strategies that could be considered inconsistent with the requirements of the teacher orientation may not be accepted. This could mean that any attempts to make changes to Thai educational institutional tactical orientations - however well intentioned scientifically or educationally - may not also be approved. This strategy therefore may be difficult to accept when students and parents want a more flexible approach to their learning environment.

The Learner-Centred Approach to Education

This strategy appears to have developed out of the backdrop of the traditional approach and seemed to result from the consequence of changing social pressures - which in Thailand may result from internationalisation of some parts of the education system. However, institutions seem firmly focused on ensuring funding, but this appears to have been balanced against student numbers. From this, it could be argued that institutions are realising that funding is related to student numbers and therefore, students have become more important in the general funding equation. Further, Thai society itself is also exacting pressures on educational institutions to make them more accountable. Different approaches have been developed to accommodate different institution and student/parent requirements. Consequently, there appear to be two approaches to the provision of Thai education. These approaches are shown in Figure 1.1

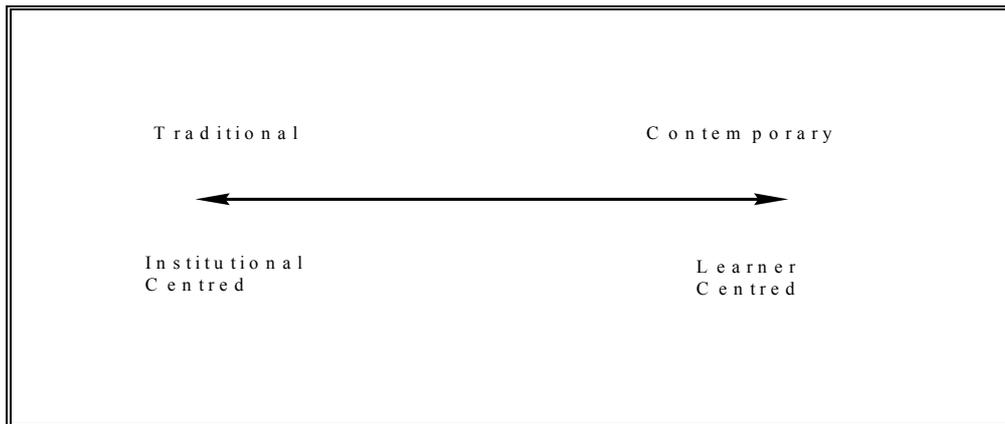


Figure 1.1

Therefore a tension seems to be orchestrated between the teacher/lecturer and learner centred approach, where the former appears to be implemented through an administrative/teacher/lecturer centred process. Various trends in Thailand that can be ascertained from using this approach suggest the following:

1. *Movement to a more learner centred process.*

The trend appears to focus institutions towards lowering large class learning and providing more individual programmes with individual attention. These are perhaps considered mostly for efficiency reasons, since larger funding budgets are promoted through mass student acquisition and the ever increasing student/staff ratios - especially in universities. The learner centred approach also seems to require that the student must learn and adjust to this process - which may in itself pose difficult learning problems for students. What appears to have been accomplished in the last 5 years or so has resulted in increased pressure being brought to bear on changing traditional educational attitudes to more student oriented educational processes and learning delivery.

2. *Movement to individualised and more flexible learning materials.* Although the normal educational process in Thailand has been large class oriented, the outcomes (learning) appear to be specifically individual. All student outcomes are proposed or planned individual outcomes - not group or institutional. However, much use is made today, for example, of the amalgamation of individual accomplishments by the use of specific institutional marketing practices. Further, group learning structures appear to take precedence over individual developments because of cost. Consequently, group based learning - without a provider presence - is essentially individualised learning within a group process. In this respect, individual viewpoints may tend to converge - not necessarily towards the correct educational focus - as the more powerful group members articulate an educational strategy that is

related to their educational needs that may not be related to other student needs. To rely on group process to enhance learning would seem to require the careful consideration of the differences in power within groups and to manage this in a way that helps all students learn in an appropriate educational environment.

3. *Movement to individualised learning strategies.* This trend relates to the institutional response of providing student learning support. However, this may refer to institutional strategies to encourage student examination passing - as this is part of the government funding formulae.

4. *Movement to understanding and accepting individualised learning requirements.* This trend appears to result from the understanding that students vary in terms of their learning ability. This would mean flexibility in the programme type, content, and delivery. Educational technology would appear to assist in this essential aspect. Ultimately, this seems to exact an influence on some form of an equitable balance between institutional and student requirements. Although in the Thai education system the this balance is still predominantly towards the institution.

5. *Movement to managing the educational process.* This trend possibly reflects the changing educational requirements - from facts and principles to problem solving capabilities. This would mean that content oriented and rote learning practices are fast becoming outdated - but nonetheless predominant. More forward looking institutions would seem to be substituting a more process oriented system that helps individuals to be at the centre whilst providing a more flexible system especially for learning support issues. However, some organisational constraints are resisting this development and thus mainstream and some traditional educationalists are perhaps slower on this take-up - possibly fearing for permanent changes to their current educational practices.

The above trends suggest that Thai education is currently undergoing massive changes that cannot be ignored. The test is essentially what is a good balance for the student and for the institution?

Teacher and Student attitudes to technology

Attitudes to educational technology differ between students as learners and teachers as educational process providers. This is said as the level of skills the teacher/lecturer has developed, the motivation and the level of interest in using technology in the classroom determines to a great degree the type of learning experience provided to students. In this respect teachers/lecturers are largely the gatekeepers of educational technology and their attitude to the technology affects teacher/student interaction and the take-up of good pedagogic process.

Teacher/Lecturer Attitudes

Teacher attitudes appears to reflect subtle predisposition's that teachers/lecturers have of themselves in relation to their technology skill levels and interests. Why is this so important? Well, the motivation to learn about technology, use it and be comfortable with it is a necessary step in bringing an enthusiastic and possibly more importantly, a credible aspect to the educational process. However, Rakes and Casey (2002) suggest that *even teachers who hold positive attitudes toward technology may have difficulty transferring these attitudes into productive actions*. Students need to be led and the leaders are the teachers/lecturers. This does not mean innovation and risk, but it does mean accepting this role as part of the *natural* development of the educational institution. As greater numbers of technology systems are installed in educational institutions, the demands on classroom teachers to integrate technology into instruction thus also increase. Consequently, many teachers/lecturers - especially the more experienced teachers/lecturers - have perhaps been unable to find effective ways to use technology in their classrooms (Smerdon, et al, 2000).

Student Attitudes

Home life appears to have an influence on student attitudes, as does gender. However, to make one point, research has shown that computers have been overwhelmingly bought for males at home, and this coupled with design and technology in the curriculum as being mostly for males has signifi-

cantly affected student attitudes to using technology in Thai education.

Managing teacher and student attitudes

Simple advice, such as making technology available to everyone and increase training to staff in order to enhance technology skills and its consequent use are all very admirable. However, this alone does seem to make attitudes change. Access is one thing, allowing creative use of the technology is another. Conducting an audit of technology attitudes in any Thai educational institution would at least provide the recognition that there will be differences between students, between staff and between staff and students. This audit can be used to prepare the ground for managing more effectively educational technology use at the institution and also indicate to students, staff and parents that the institution management are committed to helping everyone become technologically aware.

Access

Access to technology can be seen to reflect both its availability and also the managerial strategy adopted by the institution. More visible elements include location of facilities, number and the type of technologies available. The development of access to facilities requires a managerial strategy that reflects the various uses the technology is used for, priority in resourcing needs, and managerial and structural strategies. All these elements have to work together in order to ensure a variety of access conditions for both staff and students.

Physical access of facilities could be protected through card swipe arrangements that are controlled by central administration. Computers and other technology can be protected through passwords in the case of computers or simple, but effective bar-code arrangements.

Of greater concern to educational managers is perhaps the notion of fairness of access to be afforded to all students and staff. For example, many students have restricted access to technology because of their learning or physical disabilities. Ways must be found to ensure that these students have the same opportunities as other students and staff. Technology exists that can help enormously here and a clear policy and strategy should be developed. However, the downside is that this technology adds to the cost of the technology provision and therefore educational managers must make some hard choices, whilst balancing cost with individual needs.

THE PURPOSE OF TECHNOLOGY IN THE THAI CLASSROOM - STRATEGIES, CHOICE AND VALUES

Technology in classrooms is seen by some people as inevitable and by others as just another fad. But what is the purpose of using technology in Thai classrooms? Many researchers have commented on

the purpose and use of technology in classrooms. However, technology serves many masters and the various imperatives generated by some writers indicates that technology is utilised for the following purposes in Table 1.1, below (based on Hawkrige, 1983):

Table 1.1

Imperative	Reflecting
Efficiency	the utilisation of technologies to replace and/or support the teaching process
Vocational	a need for students to develop knowledge and skills that may be useful in the jobs market
Societal	a need for students to integrate with society during school years and after
Pedagogic	changes to the teaching process afforded by technology development and use

Each of the above imperatives attaches an importance that is difficult to ignore. However, these four imperatives together create the pressure on educational management to utilise the most effective ways for bringing these imperatives to a successful outcome. It is considered that the juggling of these differing aspects create so many problems, issues and ultimately far ranging opportunities in the introduction, development and use of technology in Thai education.

Why is technology considered different to other methods of teaching? This is a vexing question to answer. Choosing the type of technology to use in the classroom appears to have an enormous impact on the perceived efficacy of the learning process as the technology needs to match the skills level of operation of both the teacher/lecturer and the learner. Further, the educational process itself needs to be enhanced through technology not just used as a pathway for delivering educational objectives. Thus, technology in the classroom should demand to be there only when it is beneficial to *both* the teacher/lecturer and the learner. This is its primary purpose. Other purposes include the development and use of content-free technologies that allow learners to express themselves without their learning process being inhibited. This is difficult, as the embodiment of the ideology of technology presents limitations just by being there.

Many reasons exist as to why classrooms are not places for the *normal* use of technology such as computers and other higher technologies. Among the main reasons in Thailand appear to be a lack of hardware, software and possibly the most important lack of teacher/lecturer skills (Narongsak, 2004). Staff training therefore appeared to be an overriding issue when introducing technology into the classroom – and this issue is central to the use of

technology in the classroom. Supporting this assertion, Watson (1993) indicated that there must be some form of threshold or fundamental level of technological inertia present in an institution in order for technology use to become the norm. Thus, technology creates a value system that brings the expectation that technology will be used and by doing so changes the perception of technology from an innovation to becoming mainstream. In many universities for example, technology is available but not used.

The first question that needs to be answered is whether technology should be used in the Thai classroom, and if it is then to what level of resourcing should this be supported by. Again, these questions are for educational managers to answer relative to their own circumstances. Nevertheless, if an institution is serious about technology use in classrooms - as this reflects a societal and cultural requirement to offer learning through appropriate mediums - then technology is likely to be harnessed and developed. In this respect, technology-rich classrooms could help deliver more flexible learning strategies and make it easier for the education system to assist in the development of both learners and staff. With this in mind, the following may assist in the development of such policies and strategies:

1. Computers in education should be housed in neutral spaces
2. Computer rooms should be considered part of the administrative/support system, rather be directly attached to a department
3. Computer facilities should be managed by a mix of technical and non-technical staff
4. Where appropriate consideration should also be made for making arrangements for consulting with a representative student groups and where necessary parents

5. Teachers/lecturers from all disciplines should be actively encouraged to explore opportunities for developing appropriate technology use within classrooms

6. A cross-subject curriculum team should be encouraged to develop appropriate strategies for implementing technologically related institution-wide policy

7. An ICT audit should be carried on a yearly basis to assess levels and identify features of technology participation and use

However, technology-rich classrooms are not seen as the all-powerful weapons for learning, as over-computerisation do not in themselves provide the solution to all learning needs. This requires careful assessment of the classroom needs – not only for learners but also in relation to curriculum requirements. Good practices abound where classrooms have only one or perhaps two computers available. So the rapid technocratisation of classrooms should not go ahead without an urgent assessment of the benefits and the costs associated with its introduction. Technology and the curriculum should be integrated seamlessly, so that the technology is subsumed into the fabric of learning process.

When technology is introduced do students and staff have a choice? Well there does not appear to be a simple answer to this. It would seem that the only imperative that teachers have some choice about is the pedagogic imperative. Research suggests that where technology is introduced, the pedagogic imperative is squeezed by the other three in an attempt to balance out the pressures within the system. Consequently, teachers/lecturers who resist technology introduction and its use would also seem to be not supporting the efficiency, vocational and societal imperatives. This, however is not to say that technology introduction is deterministic in nature, but to accept that due recognition should be given to all four, as an appropriate balance of these appear to provide some form of an equitable outcome for all concerned.

Technological Literacy

Information technology (IT) within educational technology has become the icon in education, as it is perceived to embody a dominant ideology that reflects a political (and therefore funding) bias that appears to favour technology as meaning innovation. In this regard, the provision of a curriculum or part of a curriculum that supports the output view may largely be a consequence of external influences. More IT, means more trained learners, with skills that can be used in the workforce. Thus, the notion of computer literacy rears its head (Robins and Webster, 1989). But who's view of computer literacy should

be adopted? The concept of computer literacy, is however poorly defined and delineated (Goodson and Marshall, 1996). Further, it appears that computer literacy stems from the notion of *political correctness* - a preoccupation that ultimately means that educational organisations do the bidding from whom it is that they are essentially paid or funded. Thus IT and computer literacy may have been taken as a single entity, that establishes itself in the minds of teachers/lecturers and students as legitimate, required and necessary. Funding orientations towards newer technology appear to help foster an increased sense of technological benevolence, as the in-built technological interface makes it easier to operate.

The particular rationality of computer literacy may tend to reflect the promoters and suppliers of computer technology. This rationality appears to be politically and technically oriented, rather than social and pedagogically aligned. Young (1984) indicated that sociologists *have neglected the emergence...of information technology and... have hardly begun to explore the issue...* This is perhaps still true today, as technology, especially computer technology, takes on an inertia that is very difficult to ignore. Of greater concern is the notion that much of the use of computers is on the how, rather than why. This is supported by the presumption of the requirements of vocational education being predominately skills-based. Beynon and Mackay (1989) indicate that *much of the literature is focused on the technology, as opposed to educational process, or outcomes.* The use of such technologies appear to reflect a set of ideological, political and cultural biases that narrows the field of socialisation to that invested in the technology. Consequently, the design and use of the technology promulgates a view that may reinforce the decisions previously made by power holders and the stakeholder and learner choices appear to be restricted in what Bowers (1988b) suggests as a vehicle for narrowed and reduced *cultural transmission*. Thus, the embodiment of such technology contains a hidden agenda that is perhaps generally and not entirely understood by the recipients and users, or even the decision makers who purchase such technologies. An extension of technological literacy is information literacy. The importance of information literacy has developed in direct response to newer technological developments and it is widely accepted that ICT skills are also an important component of information literacy skills (Eyre, 2003). On this critical aspect, Narongsak (2004) indicated that the Thai government recognises the issue of technological literacy through the *inadequacy of the ICT curriculum, teacher and specialist capability* and the lack of a coherent process for *carrying out development work* (see also Ministry of Education ICT Master Plan).

CONCLUSION

Assessing the impact of ICT on the learning environment in the Thai classroom requires that consideration is made of technology and how staff and learners react to it. Technology use in the classroom brings profound changes to the way that teaching methods can be used or are expected to be used. Failure to develop a whole-institution ICT strategy which takes into consideration learning, teaching and administration aspects of institutions appears to affect how technology is used within them. Educational technology - in its many forms, guises and usage's - is considered to be central to assisting the application and management of quality within the classroom and that to improve attainment levels using ICT, the Thai education system needs to support institutions as learning organizations, by employing new ways of working in which informed choices are exercised by capable professionals (based on Kinder, 2002) and scholarly parents.

Attitudes to technology appear to affect how technology is viewed and used. This is also a management issue, as a more positive attitude to ICT makes it easier to accept and experiment with. The development of access to facilities requires a managerial strategy that reflects the various uses the technology is used for, priority in resourcing needs, and school managerial and structural strategies. All these elements have to work together in order to ensure a variety of access conditions for both staff and students.

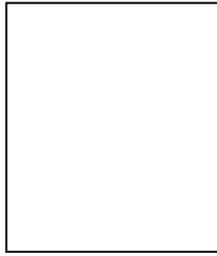
Thai Classrooms are not passive environments and technology can enhance these environments by helping to develop interactive teaching and learning strategies. However, acceptance of the use such technology appears to reflect a set of ideological, political and cultural biases that narrows the field of socialisation to that invested in the technology. Technology-rich classrooms could help deliver more flexible learning strategies and make it easier for Thai educational institutions to assist in the development of both learners and staff. This is however, resource based and if the Thai government is serious about helping to develop ICT as a significant tool for the enhancement of educational practices in Thai society then more emphasis must be placed on focusing efforts on helping the teacher/lecturer engage more effectively with the promises of what ICT can offer the classroom.

As the Thai Ministry of Education has recognised - ICT is crucial to the development of all Thai citizens - and in this regard requires careful and serious consideration of the issues surrounding its development, introduction and use.

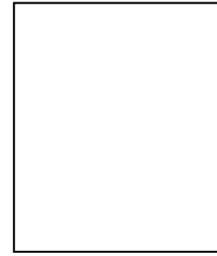
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