Maritime Education and Training - the future is now!

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ABSTRACT

Maritime education and training (MET) is, of course, but one sub-set of the wider education and training system in general and, as such, MET providers must be cognisant of both current educational practices and the wider environment within which education operates. To some extent MET is still coming to terms with the changes brought about by STCW 95 however, emerging shifts in education in general pose even greater challenges for educators and MET providers alike.

Following a brief review of the current approaches to the provision of MET the paper suggests that the changes which have occurred to date are relatively minor compared to the major changes which are beginning to sweep through the practice and provision of higher education in general.

Education is rapidly becoming globalised, massified and increasingly treated as a commodity. Each of these issues is examined before detailed consideration is given to the implications for both educators and providers of maritime education and training.

Following the detailed consideration of the implications for MET the critical issue of how to turn these challenges into opportunities is examined and some solutions are postulated. These solutions provide some insights into how MET could create its own future.

The paper concludes that if the providers of MET do not start developing their own future in a coherent, structured and systematic way then others will impose it on them. MET providers will then, again, be faced with a situation similar to STCW 95 where educational change was imposed leaving the MET providers to deal with the positive and negative aspects of the imposed changes.

1. Introduction

The adoption of STCW 95 has already caused significant changes in the way maritime education and training providers go about their business. Courses have been redesigned, quality systems put in place and approval from the marine administration to provide training obtained. These changes have, essentially, been imposed upon training providers and in many cases this is deservedly so. By forcing providers to concentrate on what graduates should be able to do versus what they should just know a greater emphasis on the educational process, pedagogy, is occurring. This is but the tip of the changes with which maritime education and training providers will have to grapple. The whole of education is undergoing change with much of the change being driven by the seemingly unstoppable force of globalisation, the exponentially growing force of the internet, and the inevitable force of commercialisation. Educational paradigms are rapidly changing and it is therefore critical for the survival and growth of maritime education and training that these changes are fully understood so that the decisions on how best to meet these changes are made in an informed way.
2. Education, Training and STCW 95

Maritime education and training has traditionally focused on preparing students to become seafarers and, in the case of cadets and officers, providing courses of study aimed at assisting them to gain a certificate of competency/licence. During the 1960's/1970's a move towards a more academic approach became discernable with two distinct avenues emerging. One approach, adopted in countries such as Australia and UK, was to integrate certificate of competency studies into sub-degree courses and offer broader and deeper studies at degree and post-graduate level for those who chose to further their studies. The other approach, adopted in countries such as Japan and USA, was to incorporate certificate of competency studies into bachelor degree courses which provided broader studies than that required for the certificate of competency alone. Additionally, some countries such as Singapore and Malaysia continued the traditional approach of providing courses of study aimed entirely at gaining a certificate of competency.

Then along came STCW 95 which can be seen as an indictment of maritime education and training worldwide.

"We consider ourselves to be professionals. We get our institutions quality assured. We consider we produce safe, well trained seafarers. But on a range of objective measures many maritime education and training institutions have failed. Failed that is to produce safe, well trained seafarers. In short we have failed to act effectively. STCW 95 bears witness to this failure as it is not just about the competence of seafarers, it is also very much about the competence of those of us who educate and train seafarers as well as the institutions in which we work." (Lewarn, 2000a)

As professional educators we should be ashamed that it has taken an international convention to drag maritime education and training into the world of modern educational practice. STCW 95 emphasises that education and training outcomes must focus on what the learner is able to do rather than just what they know. This approach is not new to educationalists but just ask yourself why it is that so many countries and their maritime education and training institutions have experienced difficulties in adopting the STCW 95 competency based approach to learning. (Lewarn, 2000b). For those maritime education and training institutions where certificate of competency studies are incorporated into bachelor degree courses there is evidence eg Nakazawa (2000) and Zec et al (2000), of a real conflict between the academic approach and the competency based training approach. Anyone really involved in education should recognise that the approach adopted in STCW 95 is a reflection of criterion referenced training, which was in vogue in the 1970's, and competency based training, which is currently in vogue. (Lewarn, 1997). Are we so involved in the technical and research issues associated with maritime education and training that we neglect the fundamentally critical educational issues?

Perhaps of equal concern to maritime education and training professionals should be the fact that STCW 95 is a change imposed by regulators on educators. Whilst it is hard to deny the right of the regulators to determine what the graduate from a maritime education and training institution should be able to do it is certainly overly restrictive when regulators prescribe just how maritime education and training should be carried out eg location, study pattern, teaching methods, delivery medium. It is important for maritime educators and trainers to become more involved in educational issues and take greater control of the educational processes. STCW is a relatively minor change when compared with the major changes emerging in education in general and they pose even greater challenges for educators and maritime education and training providers alike, particularly if the regulators are out of touch with modern educational practices and trends and are overly restrictive and prescriptive.

3. Education, Training and Change

Education today is in an era of rapid and sustained change. The old paradigms are increasingly irrelevant and being replaced by new paradigms. These fundamental shifts in higher education are reflected by Inglis et al (1999) and are summarised in the following Table 3.1.
Table 3.1  Old and New Paradigms in Higher Education

<table>
<thead>
<tr>
<th>Old Paradigm</th>
<th>New Paradigm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Take what you can get</td>
<td>Courses on demand</td>
</tr>
<tr>
<td>Academic calendar</td>
<td>Year round operations</td>
</tr>
<tr>
<td>University as a city</td>
<td>University as an idea</td>
</tr>
<tr>
<td>Terminal degree</td>
<td>Lifelong learning</td>
</tr>
<tr>
<td>University as ivory tower</td>
<td>University as partner in society</td>
</tr>
<tr>
<td>Students 18-25 years old</td>
<td>Students all ages</td>
</tr>
<tr>
<td>Books primary medium</td>
<td>Information on demand</td>
</tr>
<tr>
<td>Tenure</td>
<td>Market value</td>
</tr>
<tr>
<td>Single product</td>
<td>Information reuse/exhaust</td>
</tr>
<tr>
<td>Student as necessary evil</td>
<td>Student as customer</td>
</tr>
<tr>
<td>Delivery in classroom</td>
<td>Delivery anywhere</td>
</tr>
<tr>
<td>Multicultural</td>
<td>Global</td>
</tr>
<tr>
<td>Bricks and mortar</td>
<td>Bits and bytes</td>
</tr>
<tr>
<td>Single discipline</td>
<td>Multi-discipline</td>
</tr>
<tr>
<td>Institution centric</td>
<td>Market centre</td>
</tr>
<tr>
<td>Government funded</td>
<td>Market funded</td>
</tr>
<tr>
<td>Technology as an expense</td>
<td>Technology as a differentiator</td>
</tr>
</tbody>
</table>

The challenges posed by STCW 95 pale into insignificance when compared to the challenges created by these changes and, of course, maritime education and training is not insulated or immune from these changes.

These changes can be analysed in a variety of ways but for the purposes of this paper they are considered in terms of three major underlying trends, namely:

- education is becoming globalised
- education is becoming massified
- education is increasingly being treated as a commodity.

Globalisation of education services has seen the demise of traditional student catchment areas and the rise of borderless education services. There has been an increase in competition as providers set up shop in overseas countries. This may occur through a physical presence, a partnership arrangement or flexible learning systems. Additionally, students are increasingly mobile and are willing to travel overseas for their education. Globalisation changes the way in which educational institutions conduct their business and provide their services.

Massification of education has occurred as education services become increasingly accessible to more people. Flexible learning opportunities for students are enhanced through the increased use of the wide range of media and technologies now available. Education is moving from learning which occurs 'just in case' to learning which occurs 'just in time' i.e lifelong learning. Massification changes the way in which educational institutions deliver their services.

Commodification of education is not new as educational services have been bought/sold over many years. What is changing is the role of academic staff. Traditionally, academic staff designed courses, prepared support material, taught students, set and marked examinations. This work is becoming disaggregated as the various elements are outsourced such that the educational process becomes more like managing a logistics chain. Courses have increasingly limited intellectual property value as more and more material is publicly available through the internet. Commodification changes the academic ethos away from scholarship towards commercialisation.
These trends have led to fundamental changes in the relationships between the education service provider (seller/MET institution) and the education service user (buyer/MET student) such that education is increasingly market oriented ie it provides what the customer wants not what it thinks the customer wants.

4. Implications and Opportunities for Maritime Education and Training

Traditionally maritime educationalists and trainers have concentrated on the technical aspects of their disciplines but with such fundamental shifts occurring in education in general it is obvious that maritime educationalists and trainers will need to embrace these changes if their future is to be assured. Students studying at maritime education and training institutions have a right, as well as an increasing expectation, that the services they are purchasing are aligned to the changing community norms about the quality and delivery of education. These norms are increasingly international in nature and best practice now means benchmarking with organisations in other countries.

Education is becoming increasingly globalised and maritime education and training is lagging in this trend. One way to ensure a future in the global market place is to develop meaningful alliances and networks. Alliances do exist between provider institutions as well as between providers and users but it is postulated that greater use of joint ventures and memoranda of understanding could be made to improve the accessibility and quality of maritime education and training.

Until relatively recently networking between maritime education and training institutions tended to be somewhat superficial with many expressions of good intent but not a great deal of action. This has changed. The creation of the Association of Maritime Education and Training Institutions in Asia Pacific (AMETIAP) in 1996 and the International Association of Maritime Universities (IAMU) in 1999 has provided a real impetus to improve collaboration between maritime education and training providers. At present both networks are relatively inwardly focused but both networks as they grow will inevitably bring a more global approach to the quality and delivery of maritime education and training. Networks provide opportunities to grasp the new paradigms in education.

The massification of education has, to a great extent occurred as more and more providers grasp the benefits of flexible learning. Flexible learning can be taken to mean the provision of valid and reliable learning experiences by utilising the best pedagogical mix of location, study pattern, teaching method, study material and delivery medium. Lewarn (2000c) describes the main elements of each facet of flexible learning in the following Table 4.1.

Table 4.1 Elements of Flexible Learning

<table>
<thead>
<tr>
<th>Element</th>
<th>Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>- on campus;</td>
</tr>
<tr>
<td></td>
<td>- off campus (workplace, home).</td>
</tr>
<tr>
<td>Study Pattern</td>
<td>- full time;</td>
</tr>
<tr>
<td></td>
<td>- part time;</td>
</tr>
<tr>
<td></td>
<td>- combination of above.</td>
</tr>
<tr>
<td>Teaching Method</td>
<td>- lecture;</td>
</tr>
<tr>
<td></td>
<td>- tutorial;</td>
</tr>
<tr>
<td></td>
<td>- workshop;</td>
</tr>
<tr>
<td></td>
<td>- distance education;</td>
</tr>
<tr>
<td></td>
<td>- simulation;</td>
</tr>
<tr>
<td></td>
<td>- discovery techniques (labs, site visits).</td>
</tr>
</tbody>
</table>
Study Material
- print (books, notes);
- audio (tapes);
- visual (videos);
- multimedia (CD Rom).

Delivery Medium
- personal (face to face);
- technologies including:
  • teleconferencing;
  • videoconferencing;
  • radio;
  • TV;
  • Computer (e-mail, internet ie on-line learning, floppy disc, CD).

As just-in-time learning replaces just-in-case learning and lifelong learning gains yet further acceptance maritime education and training providers will change the way in which learning is delivered to the student. Apart from study schools, workshops and distance education it is inevitable that online/digital delivery will play an increasing role and, provided conservative marine administrations agree, seafarer students will also benefit from these changes. Flexible learning, properly delivered, is not a cheap option and it is therefore important for providers to determine whether to 'go it alone' or partner with others. The dangers of all providers 'going it alone' and trying to 'reinvent the wheel' are obvious and as such collaborative arrangements between providers seem a sensible way to proceed in order to maximise the skills of the collaborators and also to maximise the benefits to students.

Education as a commodity is very much part of the new paradigms in education. Maritime education and training operates in a specialised niche market which, traditionally, sells its services directly to its customers ie its students. Commodification leads to the consideration of what apart from teaching services, can be bought/sold. Research by Coaldrake and Stedman (1998) into the suite of tasks normally undertaken by academic staff shows that academic work can be disaggregated as illustrated in Table 4.2.

Table 4.2 Suite of Tasks undertaken by Academic Staff

- assessing students' credentials and giving credit for entry
- designing and co-ordinating units and courses of study
- designing and developing resources used in learning, including textbooks, videos and computer packages
- assessing resources for quality
- navigating and advising students through choices of study options
- delivering instruction eg lecturing, demonstrating practical work in laboratories
- acting as guide and mentor to students, either individually or in groups
- assessing, evaluating and providing feedback on student progress
- certifying completion of award programs.

Accepting that education is increasingly globalised and massified it becomes evident that the various elements of academic work could be disaggregated such that they could be carried out by different persons in different locations. This is happening now particularly in the context of online delivery of learning where the globalised communications systems are used to maximise learning opportunities for students. For example, the curriculum design may occur in two partner institutions who, then employ content experts, learning resource material developers, tutorial support, assessment markers all in different locations but all connected via the internet and managed by the partner institutions. Maritime education and training providers have not yet grasped the potential of conducting business in the manner described but networks such as IAMU make this scenario increasingly likely. The inertia of the existing system should not be underestimated but the question is not whether the nature and
structure of academic work will change, but what the timing and extent of change might be. (Coaldrake and Stedman, 1999).

5. Conclusion

It must be clear that few maritime education and training institutions possess either the resources or all the skills necessary to fully grasp the opportunities presented by the rapidly changing education environment. It also seems evident that to maximise the benefits which these opportunities present far greater collaboration is necessary between maritime education and training providers. A truly global maritime university could be developed: not a WMU but an organisation set up and run in a business like manner, taking the best courses and skills from the partner institutions, and using flexible learning techniques to the maximum: a virtual maritime university. Many universities are involved in this kind of venture now so if maritime education and training providers want to survive and grow it is essential to participate in these changes - now.

Will it happen? If maritime education and training providers want it to - yes. The key point is that the future is in our hands - now! If we do not grasp the opportunities now then others will do it for us again.

References