Bringing Out the Optimum in Maritime Education and Training Enhancing Quality in Maritime Education and Training

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Across the world, quality assurance has become an increasingly dominant theme in maritime education in the past 10 to 20 years, and international maritime processes play an important role in the way quality assurances is interpreted and implemented. The concept of quality enhancement and the involvement of key stakeholders, such as students and employers, tend to be limited and, in case of employers, are relatively rare. Quality assurance touches all aspects of maritime universities life. Any project related to QA should cover quality management, quality assurance in curriculum development, staff development for quality assurance and quality assurance information systems.This applies equally to academies within the International Association of Maritime Universities (IAMU) as well as other maritime institutes not in the said association.The IAMU program, with its long and established history (about 15 years) of developing cooperative networks among IAMU universities is perfectly positioned to assist maritime institutes, shipping companies and port authorities, etc., in their countries in the development of quality enhancement and assurance mechanism. Mass access and competitive remuneration from maritime industry have put pressure on the quality of teaching: at the same time as more teachers are needed, attractive salaries are luring highly qualified graduates and experienced staff into private sector. Mobility and the demands of the international maritime market provide incentives for maritime academies to cooperate in the recognition of qualifications and to open their maritime education systems to students from other countries.

Keywords: *enhancing quality assurance, maritime education, IAMU program.*

1. Introduction

Excellence is a cornerstone for universities, academies and institutes, but the quest for quality in maritime education institutions has acquired a new insistence in recent years.Maritime education institutions are operating with increasing independency although it is supposed to work in accordance with a uniform curriculum that is STCW convention.The governmental maritime education institutions receive lump-sum funding from the government, while in return request increased amenability. At the same time there has been growth in the number of private maritime education institutions and a consequent need to establish the quality of their education and training and qualifications. Mass access and competitive support from the maritime industry have put pressure on the quality of maritime teaching and training, at the same time as more marine teachers are indeed, attractive salaries are attracting highly qualified maritime graduates and experienced staff into the private maritime teaching sector. Mobility and the demands of the maritime international market provide stimulants for maritime institutions to cooperate in the recognition of qualifications and to open their maritime education systems to students from other countries. The Arab Academy or Science, and Technology and Maritime Transport is a prime example in the Middle East of such developments and its associated need to agree to standards for quality assurance which can be demonstrated and recognized across borders.

2. Quality Assurance

Quality assurance 'QA' is a generic term in education as well as maritime education and training which lends itself to many interpretations: It is not possible to use one definition to cover all circumstances. QA touches all aspects of maritime education institution life and any project concerned. QA must cover quality management in curriculum development, staff development for QA and QA information systems. Quality in maritime education system depends to a large extent on teachers who are well trained and highly motivated. A key element of any government's strategy is a system of accreditation, enabling teachers to acquire new skills through training and rewarding them with good pay and promotion when they succeed. A host of new skills is needed also for managerial staff, as are classroom resources and technologies, especially IT, for institution management. [R1, 13 and R 22]

3. Preview of Maritime Education and quality Assurance

There is an increasing interest all over the world in quality and standard, reflecting the rapid growth of education and maritime education is not far from this growth. International maritime processes play an important role in the way QA is interpreted and implemented. Some fundamental principles which permeate QA work are:

1-The interests of students as well as employers and maritime society more generally in good quality in maritime education and training.

2-The central importance of maritime institutional autonomy, tempered by a recognition that this brings with it heavy responsibilities.

3-The need for external QA to be fit for the purpose and to place only an appropriate and necessary burden on maritime institutions for the achievement of its objectives.

This applies to academies within the International Association of Maritime Universities (IAMU) as well as other maritime institutes not in the said association.The IAMU program, with its not long and established history (about 15 years) of developing cooperative networks among IAMU institutions is perfectly positioned to assist maritime institutes, shipping companies and port authorities, etc., in their countries in the development of quality enhancement and assurance mechanism. It has done so throughout the few years of the establishment. This review introduces testimony to its achievements. It also illustrates the very specific problems some of IAMU members may face in implementing QA mechanisms that can support the need for continuously maintained excellence in knowledge societies. [R 2 and R 23]

4. Associate Maritime Institutions

It seems there is a need for IAMU program associate maritime institutions to promote the development of maritime national qualifications frameworks as an integral ingredient of QA in the institution. If QA units and offices in some of maritime education institutions have inadequate staff, programs for academic and administrative staff development should be launched and resources should be designated for the ongoing professional development of the said institutions staff. Central information systems in some maritime institutions, which are keys to good decision making, may be a weak spot.These must be upgraded and coupled with the increased use of institutional intra-nets for communication, teaching and learning as well as training. Also if the involvement of employers and students in QA and curriculum process is generally weak, such involvement must be encouraged and supported. In some maritime education institutions, there is a need to develop effective material courses for staff development and training for all levels and types of staff.

4.1 Competences in Maritime Institutions

Competences are obtained or developed during the process of learning by the student/learner. In other words, learning outcomes are statements of what a student/learner is expected to know, understand and/or be able to demonstrate after completion of learning. They can refer to a single course unit or module or else to a period of studies. Learning outcomes specify the requirements for award of credit. Competences represent a dynamic combination of knowledge, understanding, skills and abilities. Fostering competences is the object of educational programs. Competences should be formed in various course units and assessing at different stages. Competences can be distinguished in subject specific and generic ones, and it has highlighted the fact that time and attention should also be devoted to the development of generic competences or transferable skills. This last component is becoming more and more relevant for preparing marine students well for their future role in maritime society in terms of employability. The three types of generic competences:
1-Instrumental competences: Cognitive abilities, methodological abilities, technological abilities and linguistic abilities;
2-Interpersonal competences: individual abilities like social skills (social interaction and co-operation);
3-Systemic competences: abilities and skills concerning whole systems (combination of understanding, sensibility and knowledge, prior acquisition of instrumental acquisition and interpersonal and interpersonal competences required). One focal area could be leadership courses for the senior managers of maritime institutions presidents, vice-presidents, deans, and head of departments. It could cover courses for academic staff about the principles of QA, approaches to curriculum development, new teaching methods and general professional skills updating. Finally, priority support should be reserved for courses for senior administrative staff working in the field of QA and associated administrative areas. Assistance may help to develop the capacities to design models for quality enhancement and assurance mechanism. [R 22]

5. Quality Assurance in Sequence

The sequence of education is changing rapidly in the world; there should be a new connection and synergy between maritime education, research and innovation. Indeed, maritime academies are now attempting to redefine their role in this sequence; they are reacting to perceived and real threats. They are founding marine graduates, research or post graduates schools, they look for new forms of collaboration with industry and in particular maritime industry, and for new ways of financing their research and post graduates programs. They are concerned with the shift of major research funding opportunities away from academia; they are founding research parks. QA has become increasingly prevailing theme in the maritime education and training institutions in more than ten years. However, it would be a mistake to conclude from this increasing engrossment that quality has not previously been an issue for maritime education and training institutions. World Maritime University “WMU” and other MET institutions members in IAMU set education and training ambitious and far-reaching goals for excellence in the pursuit of knowledge.While it may be argued that these academic goals have been frustrated by a more instrumental approach, they still stand as important pillars linking MET and research. The pursuit of knowledge and its transmission remain at the heart of the MET mission and this is recognized implicitly and explicitly in the key documents on OA.
Within this broader sequence, new drivers can playa worthwhile role. The increasing growth in student numbers, the ratification that maritime education and training and skill levels are crucial for the economic, political and social success of the world and national economy, and the understanding that

maritime education and training have become an international and competitive market area, all contribute to the understanding of the need for more transparency and solidarity in QA. [R 9]

5.1 IAMU and Standard Guideline for QA Developments

The word 'standard' is employed in a variety of ways across the world, ranging from statements of narrowly defined regulatory requirements to more generalized description of good practice. The word also has very different meanings in the local contexts of maritime education systems. In IAMU, it may be recommended that maritime institutions should cooperate in quality assurance in maritime education and training in order for it to become more transparent and trustworthy for mariner students and scholars from other countries. The recommendation should outline the essential features of the quality assurance system. These in large part have been implemented throughout IAMU, and can be reinforced by *"The Standard Guidelines for Quality Assurance in IAMU maritime institutions".* [R 22]

5.2 The Standard and Guidelines for Quality Assurance in Maritime Education and Training

There is a set of common principles for internal and external quality assurance. The guidelines stress that QA should be independent, and accentuate the substantive importance of institutional independency with the responsibilities which this brings.The emphasis is on embedding within each maritime education institution a quality enhancement culture that garment its mission and recognizes the distinctive nature of the institution and its mission. At the same time, maritime authority, maritime society and employers need to be assured of the effectiveness and the level of process within maritime institutions.This means that they must introduce measures of continuous self- assessment, while also being subject to external evaluation by their beers and key stakeholders on a regular and systematic basis. In conjunction with this external evaluation, detailed data should be collected and published to provide further indicators of performance. Publication and transparency are fundamental to the IAMU' members approach to QA.
Increasing and improving the quality of information available to mariner students and employers about all aspects of the maritime education and training process will improve confidence and trust in the outputs of maritime education. In practice, it may be difficult to avoid any form of ranking of performance indicators being used to judge the quality of an maritime institution, and difficult to avoid such indicators developing a competitive dimension. Indeed, it can be argued that the ranking of institutions will constitute a form of benchmarking that will contribute to quality enhancement. [R 22]

5.2.1 Standards and Guidelines for Quality Assurance

- The internal evaluation is the cornerstone of quality assurance in maritime education.
- The external evaluation is a condition of the credibility of the results of the internal evaluation.
- External evaluators are accountable for the quality of their activities. A positive external evaluation is one of the conditions for being recognized as a full member (cyclical evaluation).

5.3 International IAMU Network

A number of international maritime networks of QA were established in order to manifest the international dimension of IAMU QA. It will work in collaboration with partners of International Association of maritime Universities "IAMU" in a wide range of projects evaluating the quality of Excellence for maritime educationand training.

5.4 Marine Students Involvement

In the development of quality assurance processes, there is a need to involve marine students actively and fully in all aspects, including both external and internal evaluation, as full members of the relevant institution.
Marine students' feedback in the form of questionnaires will contribute to curriculum development. National marine student surveys can provide valuable information for students applying to maritime institutes and about students' perceptions of the quality of their education. Marine students' evaluation constitutes an important performance indicator that is contributing to the new category tables and the ranking of maritime education institutions.

5.5 Quality Assurance Accreditations

QA tends to be identified with the process of accreditation either of institutions or of study programs. While QA is a fundamental aspect of accreditation, there seems to be a growing realization that distinction should be drawn between accreditation and QA.

5.6 The Framework of the Quality Assurance

The quality of maritime education has to be at the heart of the setting up of IAMU maritime education area. Maritime authorities commit themselves to supporting further development of QA at institutional, national, IAMU and IMO levels. This stresses the need to develop mutually shared criteria and methodologies of QA.
They also stress that consistent with the principle of institutional autonomy, the primary responsibility for quality assurance in maritime education lies with each maritime institution itself and this provides the basis for real accountability of the academic system within the national quality framework. [R 13]

5.7 Qualifications Frameworks

One important element of the QA is the development of qualifications frameworks. Qualifications frameworks are important elements in the quality process because they provide transparent statements for marine students and employers. Both the qualification frameworks and the *Standard and Guidelines for Quality Assurance* emphasize a student–centered approach based on "the development and publication of explicit learning outcomes". [R 13]

5.8 Related Development

The development should stress the importance of detailed and timely institutional and curriculum information, incorporating assessment processes and criteria. In the allocation of credits, it provides a basis for transparent and truthful curriculum planning based on learning outcomes and the associated workload for an average students.

5.9 Recognition

Recognition is a central objective of the quality process. In IAMU, we may stress the importance of recognition and the provision of information in order to reinforce recognition through detailed transcripts which, in turn, can contribute to another quality instrument- the Diploma Supplement. The Diploma Supplement provides, in a coherent and consistent form, easily accessible information about the content and level of a qualification together with a range of other information to assist stakeholders in its evaluation.

5.10 Staff Development

Staff development and training is a fundamental aspect of the implementation and sustainability of a QA and enhancement culture. The primary responsibility for training and development lies with maritime educational institutions. May be in some academies there are formal training requirements for new academic staff, there is a general tendency to emphasize academic qualifications as the basis for entry to the profession, and little formal training in academy teaching is given or required.

6. Quality Assurance in IAMU

There is a strong and important cultural dimension to quality which should not be obscured by the increasing search for international standards. Irrespective of the different cultural and historical contexts, a common vocabulary and understanding of concepts is developing.
The main drivers of change in maritime education and training and the incentives for introducing a national and maritime institutional QA process can be identified as:
- the growth in maritime education,
- concern to improve standard for national and regional employment and international and international recognition,
- the need to respond to an increasingly competitive environment,

The implementation of a more structured approach to QA and enhancement is a challenge for academic and administrative staff at all levels:
Leadership: The quality of leadership and the support of the senior management was a postulate. The development of leadership skills as a part of the quality agenda may be a topic which maritime institutions and maritime authorities should considered.
Teaching: For achieving change, it requires an explicit recognition of the professional importance of teaching and ongoing marine staff development. Attestation procedures which review teachers' contracts every certain year continue to place a heavy emphasize on formal qualifications and publications. The results of student feedback questionnaires play a part, but this tends to be negative rather than positive: wicked student feedback results over a period of time might, in extreme cases, lead to the termination of a contract, while in general, evidence of high-quality, effective teaching does not appear to lead to explicit reward or recognition. Indeed, the process of 'attestation' is not a substitute for a process of more regular staff evaluation within the maritime education institution, linked to a policy of continuing professional development.
Staffing: QA is a developing field and the staff is charged with responsibility for implementing this work to keep up-to-date with local, national and international developments in the area.This requires a dedicated team of professionals who will gain and keep the respect of colleagues through their commitment to professional standards. In maritime education institutions, it is essential that the QA office/department should have an appropriate full time level of staffing capable of ensuring the implementation of all aspects of QA and enhancement within the institution. It is not sufficient simply to develop full documentation of processes and procedures, which in itself is a significant and time-consuming professional task; effective implementation of the processes must be supported and maintained, and documentation kept continually up to date. Achieving this will require professional, well-qualified administrative staffs that are well supported and included in the staff development process.
Self-assessment: Self- assessment is used widely in the preparation for national accreditation. It is evident that it is demanding regular cycle. However, the focus is on meeting the demands of the accrediting body and responding to the criteria which it sets frequently with emphasis on quantitative data.

Faculty autonomy: The concept of an autonomous, responsible maritime education institution is difficult to realize in a situation where units within the maritime institution, such as faculties and departments, militate against a coherent and consistent application of QA and enhancement processes. It cannot be in the best interests of students, who will increasingly wish to study on a multi- or interdisciplinary basis and take units or modules from outside their department or faculty as part of their personal development and in preparation for the diverse needs of the contemporary maritime labour market.

Student involvement: The student's experience is fundamental to the quality debate. While marine student feedback questionnaires are increasingly becoming the norm, it should not be seen as the only way in which marine students can be engaged in the quality process. In a student –centered learning environment, students should be encouraged to develop a critical awareness and understanding of the teaching and learning process for their personal development, and an analytical approach to their experience. Increased transparency will not only help to build public confidence, it will also act as a powerful incentive to all staff and students within an institution to adopt a responsible and proactive approach to enhancing quality.

Competition: Competition is explicitly a driver for the introduction of quality procedures. The competitive environment may be generated by different factors: a selective admissions process within which marine students and their families are actually aware of what the maritime education institution is offering; the need to earn and justify higher tuition fees; an awareness of international competitors; the demand of maritime labour market; an increasing awareness of international competition for the best students. Competition for the most able professional staff also provides a powerful incentive for maritime institutions to address issues of quality in order to enhance their reputation and attract and retain the best staff.

Information systems: Institutional self-knowledge is the starting point for effective QA. It is important that maritime institutions should have the means of collecting and analysing information about their own activities. Without this will not know what is working well and what needs attention or the results of innovatory practice. The absence of effective information systems that make the fullest use of information communication technology and interactive software means that a pillar of the QA requirements is missing. It is difficult to see that effective self-assessment for external or internal purposes can take place without such information. [R 23 and 24]

7. Conclusion & Recommendations

The following is a brief set of conclusions and recommendations that are designed for both the maritime institute members in IAMU and IAMU itself:

Conclusion: It is here proposeed that IAMU should study all QA systems used in maritime institute members in order to establish one unified QA system, it may include courses for academic staff on the principles of QA, approaches to curriculum development, new teaching methods and for senior administrative staff working in the field of QA and associated administrative areas.

Recommendations:

1- Promoting the development of qualification frameworks as an integral component of QA inmaritime institution.

2- Launching programs for maritime staff development at all levels – academic and administrative, and earmarking resources for the ongoing professional development of the staff.

3- Upgrading information systems in maritime education institutions coupled with the increased use of institutional intranets for communication, teaching and learning.

4- Supporting maritime institutions in the development of an integrated institutional approach to QA and management structures.
5- Encouraging and supporting the involvement of employers and marine students at a national and institutional level in QA and curriculum process.
6- IAMU should urge maritime education institutions to continue their efforts to enhance the quality of their activities through the systematic introduction of internal mechanisms and their direct correlation to external quality assurance.

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