Gender equality policies for the incorporation of the gender perspective in maritime studies: a case study

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ABSTRACT

This paper aims to determine the effectiveness and impact of current gender equality policies, regulations and programmes in the maritime educational sector. To this end, the specific policies and programmes applied at Universitat Politècnica de Catalunya·BarcelonaTech (UPC) have been considered. More specifically, a pilot project implemented at the UPC that tries to incorporate the gender perspective in engineering university degrees, has been studied. The outcomes of such a plan on maritime studies have been analysed in order to determine the impact of its implementation. The preliminary results confirm the gender gap in maritime education, which is then transferred to the professional sector, and the need to foster more inclusive gender policies in MET institutions. Finally, some conclusions have been drawn up to provide some recommendations based on the evidence gathered with the final aim of assisting maritime institutions in making informed decisions on future gender equality actions.

1. INTRODUCTION

Although the number of female students enrolled in Maritime Education and Training (MET) institutions has shown an increase since their incorporation into maritime studies, female figures are still far from the desirable gender balance expectations. In line with other present findings and observations in the MET space, a recent study [1] shows that between 2009 and 2018, there is no significant raising tendency concerning female figures in any of the European MET universities analysed. This gender imbalance seems to be a widespread problem and becomes worse in developing countries where women have even more difficulties for enrolling in maritime programs. Besides, the same study concludes that gender equality promotion policies are still scarce or inexistent in the MET institutions studied and have had a limited effect on female enrolment figures. Hence, in spite of a raising awareness of the need to foster policies and programmes for the incorporation of female students in maritime education, there is still a lot of work to be done to guarantee the success of gender equality in MET. In line with this, considerations of gender discourse or pedagogy in maritime studies may also constitute an important

asset to reduce the present gender imbalance in this male-dominated maritime educational sector and to incorporate a new and necessary gender perspective.

2. MARITIME EDUCATIONAL POLICIES ON GENDER EQUALITY

Tertiary education institutions play an important role to address gender equality issues in MET as they transmit not only knowledge but also societal norms and values [2], to this end, they may promote of gender equality and cultural awareness [3]. In line with this, a research study carried out in 2015 [4] explored how gender equality was addressed in the curricula of maritime education, examining official study plans and curricula from eight maritime universities in Finland, Norway, Sweden and the Philippines; all countries ranked in the top five in the Global Gender Gap Index. Contrarily to the expectations, the study concluded that gender issues were not a visibly integrated part of curricula in any of the eight universities analysed. In order to bridge this gap, most institutions are developing their own policies to integrate gender issues in higher education. For example, the Swedish World Maritime University (WMU) has developed and implemented its own policies to achieve gender equality and women´s empowerment in the maritime transport sector and within the institution itself [4, 5] with quite successful results as the policies adopted for increasing the number of female graduates resulted in an augmented female student body, the policies adopted for reaching gender parity opened doors to female academics and the gender perspective was integrated in sections of the curriculum [6].

In Europe, education policy issues on gender equality are considered since the applicability of the new European Higher Education Area (EHEA). European legislation provides guidance and support to higher education institutions concerning the promotion of gender equality, political and religious tolerance, and democratic and civic values as anti-discrimination measures regarding the appointment and promotion of staff, and equal access to education and learning [7].

At national level, numerous examples of laws passed to promote a culture of gender equality in education can also be found. In Spain, there is a law for the quality of education that fosters anti-discrimination and gender equality in educational centres [8]. In line with this, in order to foster a culture of equity and equality of opportunities for women in all Catalan Universities, the Catalan University Quality Assurance Agency (AQU) is promoting a regulation for the incorporation of the gender perspective in the all the bachelor's degrees in tertiary education in Catalonia by 2021 [9].

2.2. THE GENDER DIMENSION IN TEACHING: A UPC PROJECT

The Universitat Politècnica de Catalunya · BarcelonaTech (UPC) is a public institution of research and higher education in the fields of engineering, architecture, sciences and technology, and one of the leading technical universities in Europe positioned in the main international rankings. The UPC promotes equality within the university community and in the society it serves. This is the reason why up to the present, this institution has implemented three different Equal Opportunities Master Plans with the general aim of promoting a culture of equity and equality of opportunities for women [10, 11, 12]. These plans also intend to overcome the present gender imbalance between female and male students in the different UPC engineering studies (25.8% of enrolled female students over

the last decade). The I and II Plan were implemented during the periods 2007-2011 and 2013-2015 respectively and since 2016, the III Plan for Gender Equality is in place. The results of the implementation of the I and II Plan show a slight increase in female student enrolment at degree level and a stabilisation of the falling tendency at master and doctoral level. Thus, these plans may constitute a first step to overcome the gender gap in engineering studies but the results reveal that there is still a lot of work to be done in this direction. Concerning Barcelona School of Nautica Studies, although these plans are not particularly addressed to Maritime studies, the school also benefited from these promotion policies and slightly increased the number of female student enrolment when the II Plan was launched.

In addition, in order to comply with the AQU regulation for the incorporation of the gender perspective in the all the bachelor's degrees in tertiary education in Catalonia by 2021, the UPC launched a pilot project to integrate the gender dimension in teaching. The *Gender dimension in teaching and GEECCO project* receives funding from the European Union's Horizon 2020 Research and Innovation programme, which also includes gender equality as a transversal issue in all its work programmes, thus ensuring a more integrated approach to research and innovation. In the first implementation of this pilot project, eight teams from different UPC engineering degrees participated with a view to introducing the gender perspective in teaching in some of their courses. The participating teachers volunteered to incorporate some activities in their courses to make students work and reflect on different gender issues. The outcomes of the project were analysed in order to determine the impact of its implementation and its transferability to other engineering courses and degrees. Likewise, as the present research is mainly addressed to MET, its main focus is on the applicability of such policies and proposals on maritime education and its transferability to different maritime courses and degrees.

3. METHODOLOGY

This paper focuses on the implementation of the UPC Gender dimension in teaching project at Barcelona School of Nautical Studies and analyses its impact on maritime studies. One hundred students from Marine Engineering and Nautical Studies & Maritime Transport bachelor's degrees participated in this pilot project. The selection of courses chosen to implement the proposed guidelines was based on the willingness of the teaching staff wishing to contribute to the project. The participating courses were *Maritime Technical English, Mechanics Technology, Marine Pollution Prevention* and *Sustainability and Ship Stability*. These four different courses followed an agreed methodology to incorporate the gender perspective in teaching together with the other participating UPC engineering courses.

The applied methodology consisted of a pre-test, different activities to incorporate the gender dimension in teaching, a post-test and a pre- and post-test analysis. All these steps were carried out during one semester. The pre- and post-test were developed to help gather information on knowledge, attitudes, opinions and behaviours on gender issues. The pre-test was passed at the beginning of the semester and comprised five different sections. The first one included some general information and the second incorporated questions on professional references in the maritime and naval sector. The third asked

participants about their perceptions as UPC university students on different gender issues. Section four comprised some questions relative to women figures in Barcelona School of Nautical Studies and the maritime professional sector. Finally, section five included different questions for the different participating courses depending on the activities to be undertaken in class. The activities incorporating the gender dimension were designed, developed and implemented by the teachers in line with the contents of their courses. At the end of the semester, the same questionnaire was passed and the responses obtained were analysed to determine any significant difference between the pre- and post-test results. These results were analysed individually for each course and then the mean values for all the common sections of the maritime courses were calculated to discover any common tendency in maritime studies. It should be noted that as this is the first edition of this pilot project there is still room for improvement regarding the methodology applied and that subsequent editions will be enhanced according to the weaknesses detected.

4. RESULTS AND DISCUSSION

Some preliminary results show that the gender distribution among the participating students (20% of female students and 80% of male students) corresponds to the present figures of student enrolment in Barcelona School of Nautical Studies. After analysing their replies to the pre- and post-test questions, it can be observed that students' perceptions as for the number of female students enrolled and graduated at Barcelona School of Nautical Studies, which is of 20% over the last decade, is quite accurate (see Figures 1 and 2). However, the number of correct answers slightly increases in the post-test after students were informed about the actual figures during the course.

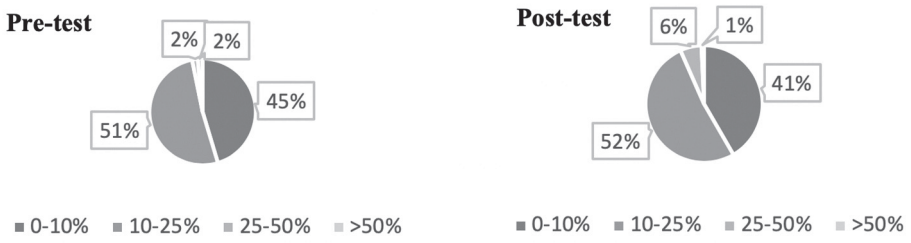

Figure 1. Student responses on female student enrolment figures at Barcelona School of Nautical Studies

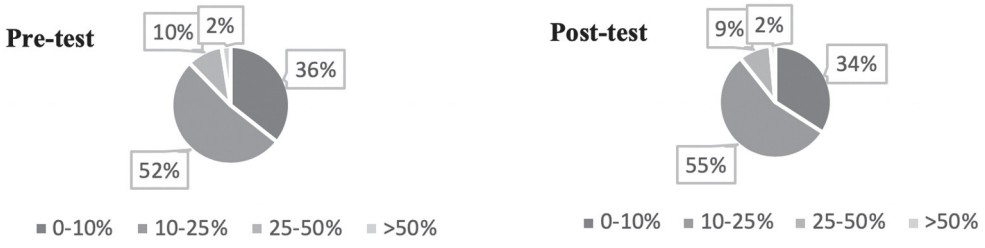

Figure 2. Student responses on female student graduation figures at Barcelona School of Nautical Studies

Similarly, when being asked about the number of women obtaining Master Certificates of Competency (CoC) issued by the Spanish Maritime Administration, which is 15% over the last decade, students realize that their expectations in the first test were not very exact and the number of right answers increases in the post-test (see Figure 3). Nevertheless, with respect to the percentage of women earning Chief Engineer Certificates of

Competency (CoC), participants rightly guess in the first test that this is not higher than 10% (it is in fact only 5%) and this percentage remains the same in the post-test (see Figure 4).

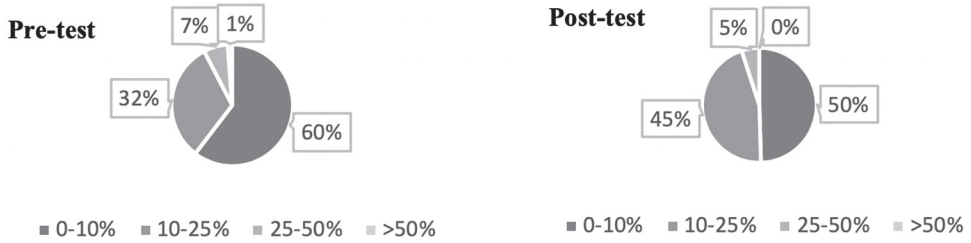

Figure 3. Student responses on women obtaining Master Certificates of Competency (CoC) in Spain

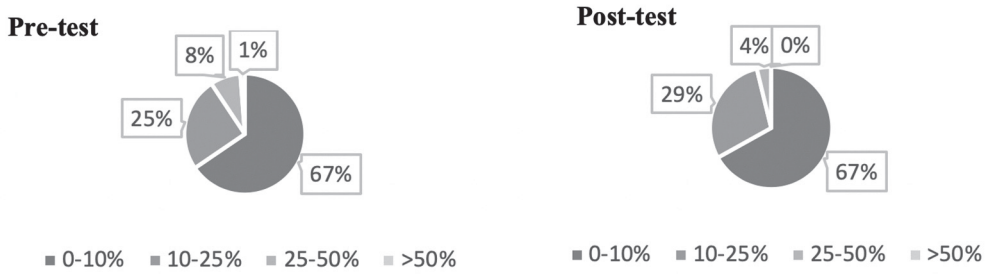

Figure 4. Student responses on women obtaining Chief Engineer Certificates of Competency (CoC) in Spain

Also, when asked about their knowledge of male and female references in the maritime and naval sector at the beginning of the course, 32% of students identify some male reference in the maritime sector in front of an only 14% that identify a female reference. However, their knowledge of female references increases up to 34% by the end of the semester although only 16% believe that there is visibility of female professionals in the maritime sector. Another section of the questionnaire asked students about their perceptions on different gender issues. Although 59% of students have never experienced a differential treatment among female and male students on the part of teaching staff, 19% of students believe that such a differential treatment exists and 16% of them consider that girls encounter more difficulties throughout their studies due to gender issues. Merely 23% of students have observed the use of sexist language in class whereas a broad 44% of them recognise an effort on the part of some teaching staff members to use a more gender-inclusive language. Concerning the use of stereotypes in teaching materials, only 8% of participants have occasionally detected some stereotyped images in presentations, course notes and books. As for classroom management, 86% of students have never noticed any significant gender pattern in the distribution of tasks in cooperative learning activities. However, those that have worked in mixed groups agree that usually girls are the ones who make decisions (94%), take notes (80%) and manage groups (75%). On the contrary, 53% of participants believe that male students intervene much more frequently than female ones in classroom interactions with the whole group. Finally, 88% of students consider the existence of gender projects like the one presented in this study really necessary.

5. CONCLUSIONS

The results of the present study show that the implementation of this pilot project for the incorporation of the gender perspective in maritime teaching has brought about some changes in students' knowledge and perceptions concerning gender issues. First of all, students become more aware of the gender gap in the maritime and naval sector and even in their own studies after participating in all the proposed activities. Furthermore, after the analysis of the results, it becomes clear that the gender dimension should be considered at different levels, namely course contents, methodology, classroom management and assessment. With respect to course contents, these should incorporate a gender-inclusive language, avoid stereotypes in the examples and make use of female references as models for students. On the other hand, including women in the bibliographic references and writing their full names may also help to give them more visibility. Concerning methodology, this should cater for different learning styles and should also allow students to reflect on social and gender issues. Classroom management should contemplate the assignments of tasks and roles in classroom interaction in order not to fall into gender-biased patterns, foster a balanced participation and offer a wide variety of experiences and topics to suit the different gender needs. Finally, although it was out of the scope of the present project, assessment should also be revised in terms of exam and question types, teacher intervention, interaction and student response as it has been demonstrated that all these aspects also affect student response depending on gender. Finally, as drawn from the results of the test and students' own perceptions, the incorporation of the gender perspective in teaching becomes crucial if we are to bridge the gender gap and offer a more inclusive training in maritime studies. This requires a joint effort from university administrators, teaching staff and students. University administrators should incorporate the necessary changes in the curricula and provide lecturers with the necessary tools to modify their teaching pedagogy and course contents accordingly. These joint efforts, together with the raising awareness of students on social and gender issues, may favour a change towards the desired direction.

To conclude, it should be noted that these conclusions obtained from the implementation of the pilot project at Barcelona School of Nautical studies are mostly based on students' answers to the different questionnaires. It will be interesting to widen this research in the future in order to gather additional support for these initial findings and observations with a view to improve the implementation of further editions of this UPC gender dimension in teaching project and to refine the results for the maritime domain. For example, the analysis of similar studies carried out in other institutions can be one of the aspects to examine in future research. In addition, the effects that gender policies may have in the maritime industry should also be considered as MET and the professional sector cross-feed each other. Besides, it is well-known that different international organisations, namely the International Maritime Organisation or the European Commission, also aim at addressing this gender imbalance in the blue economy and encourage women to step into traditionally male-dominated work areas.

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