ANALYSIS OF THE IMPLEMENTATION OF VARIOUS FORMS OF PROFESSIONAL PRACTICE AT THE FACULTY OF MARITIME STUDIES, UNIVERSITY OF RIJEKA

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Keywords

professional practice, higher education, practical skills, work-based learning

Abstract

The paper presents the results of research carried out in the framework of the project PANDORA financed by the European Social Fund. In the first phase of the research, the initial state of implementation of professional practice at the Faculty of Maritime Studies, University of Rijeka was analyzed in workshops with students, while the questionnaire filled in by employers analyzed the way professional practice is carried out in companies. Using both methods, limitations and shortcomings in the implementation of professional practice were identified and guidelines for its improvement were established. Based on the guidelines obtained, an attempt was made over a period of one year to improve various forms of professional practice in the Faculty of Maritime Studies. The performance of the various forms of professional practice was assessed through questionnaires completed by students after professional practice. The forms of professional practice assessed included simulator work, field classes, practicums and navigation practice. The results showed that better assessment mechanisms for the different forms of professional practice were established during the observation period, as well as a stronger connection of the tripartite student-professor-employer relationship, resulting in a greater number of master's and bachelor's theses and research projects in collaboration with industry. It was also concluded from the positive student surveys that greater availability of professional practice in the curricula and reinforcement of a more innovative approach facilitated the acquisition of practical knowledge and skills by the target groups.

1 INTRODUCTION

The 21st century brings great social changes. There is an increasing need for new knowledge and skills that are critical to the use of various technologies in higher education. As a result, higher education institutions are constantly investing in new technologies, equipping classrooms and investing money and time in teaching staff education. As programs of study continue to improve, the quality of study also increases, allowing students to better understand the topics covered in the curriculum. The foundation for the universities' sustained success and progress enables them to attract students from home and abroad, keep them in the domestic labour market, and ensure their satisfaction with the study program, the faculty, and the college in general.

When we speak of professional practice, we mean primarily the form of practical training provided by the employer, although this is not necessarily the only form of practice. There are various forms of professional practice that allow students to acquire practical knowledge, and it is possible to organize them inside or outside the higher education institution. The forms of professional practice that take place outside the higher education institutions include the following: Volunteer work, on-site classes, work at the fire station and school ship, visits to relevant institutions and events, work experience at employer companies, and practicums. Forms of professional practice that take place within higher education institutions include the following: Participation in projects, research, work on a simulator, computer exercises in the laboratory, guest lectures [1].

The growing need to adapt degree programs and integrate various forms of professional practice into the curriculum has led to an increasing amount of research on this topic, often including the competencies that such forms of professional practice provide. The increasing technological equipment of the faculty also increases the quality of the courses [2], [3]. Thus, the University of Gothenburg emphasized the high level of interdependence of tasks on simulators, teaching materials and the use of technology. It was concluded that professional practice on simulators allows students to focus on the subject task and emphasized the importance of this type of practice under professional guidance from professors, which allows students to experience work similar to that on board under controlled conditions [4]–[6]. The importance of field teaching for education has been demonstrated countless times, but rarely considered in the context of its importance for maritime education [7]–[10]. The University of Applied Sciences Upper Austria concluded that the use of field teaching in curricula leads to better student performance compared to traditional methods. Incorporating field teaching into educational programmes is therefore an effective way to facilitate mastery of course material and linking theoretical knowledge with practical knowledge [11]. A study conducted by the Department of Educational Sciences of the University of Genoa concluded that the implementation of practicums gradually affects the reflective practise of students, which promotes and facilitates the acquisition of new knowledge [12]. At the Faculty of Engineering at Brian University and the University of the Aegean, it was concluded that continuous improvement in the quality of professional practise at universities and continuous improvement of study programmes as a whole have a positive impact on students' professional development [13], [14].

Professional practice at the Faculty of Maritime Studies, University of Rijeka is considered an extremely important part of the curriculum, so various forms of PP are implemented in all 5 bachelor's and master's degree programs.

The Nautical Studies and Marine Transport Technology (NSMTT), Marine Engineering and Maritime Transport Technology (MEMT) and Marine Electronic Engineering and Information Technology (MEET) programs educate students to work aboard ships as deck officers, engine officers, and electrical engineers. These programs are harmonized and compatible with the World Maritime Organization Convention on Training Standards (STCW 1978). The Faculty of Maritime Studies in Rijeka, in addition to the listed maritime degree programs, also offers degree programs that educate for land-based professions, in Technology and Organization of Transport (TOT) and Logistics and Management in Maritime Industry and Transport (LMMT).

Professional practice at the Faculty of Maritime Studies is organized within the curriculum through numerous activities that enable the acquisition of practical knowledge, such as laboratory exercises, fire station exercises, work on the simulator, guest lectures, field teaching, navigation exercises, etc., or as separate courses.

When acquiring practical knowledge, students are divided into smaller groups to ensure a higher quality of the teaching process. When field classes are involved, they are conducted in groups of no more than 15 students, and the same applies to various laboratory exercises and navigation practice. Practicums and

exercises on individual simulators (e.g. cargo handling simulator) are conducted in groups of no more than 10 students.

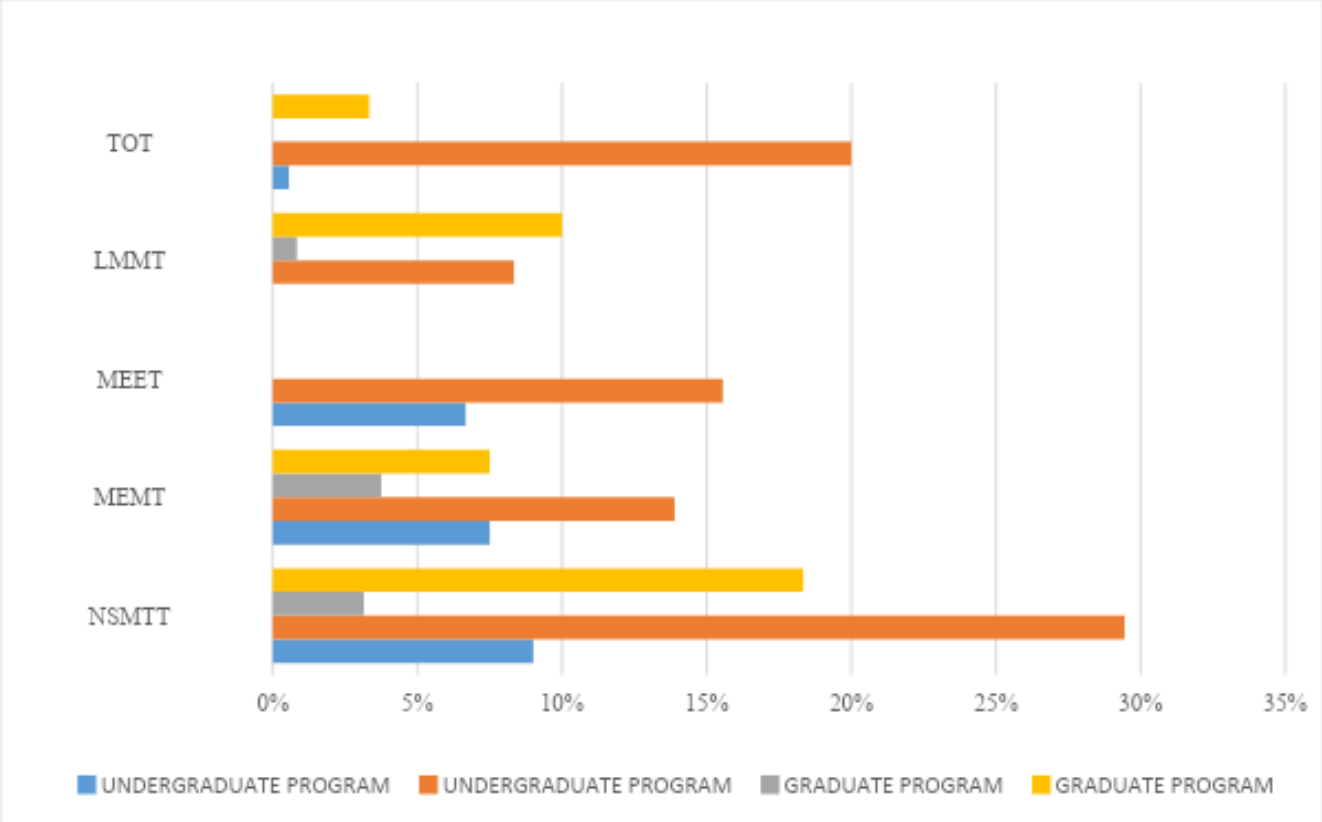

Chart 1 Review of the presentation of professional practice in bachelor's and master's degree programs.

Chart 1 shows the representation of professional practice in bachelor's and master's degree programs when it is a stand-alone form of professional practice and professional practice as part of the course. From Chart 2 shows that professional practice occurs primarily in the bachelor's degree program, especially in the NSMTT program. It can also be seen that most forms of professional practice are conducted within the course (e.g. field classes), while a small percentage of professional practice is conducted as a separate course. The Faculty of Maritime Studies is increasingly working with the business community, particularly with logistics companies. Therefore, one of the goals is to increase professional practice in the land-based areas of study, especially in LMMT where professional practice has been relatively underrepresented.

All forms of professional practice are an extremely important part of the curriculum, which certainly plays an important role for students in acquiring practical knowledge specific to certain work processes, and thus an easier adaptation to the future work environment given the greater readiness of students to enter the labour market.

2 METHODOLOGY

With the aim of improving the professional practice at the Faculty of Maritime Studies in Rijeka the first step was to collect and evaluate the opinions of the students of the faculty about the quality of professional practice, opportunities to acquire key competencies, etc. In addition, with the help of the Student services of the Faculty of Maritime Studies, data on the presentation of professional practice in specific fields of study were collected and evaluated.

The analysis of the representation of practical teaching has shown that the following forms of practical teaching, most frequently used in the performance plans, should be studied and improved, if necessary, depending on the results: Navigation practice, professional practice in companies, practicums, field classes

and exercises on simulators.

In order to conduct the most appropriate research, the research was conducted in 4 phases. In the 1st phase of the research, in the period from April to June 2020, a survey of student satisfaction with the current forms of professional practice at the faculty was conducted in order to obtain a starting point for further improvement of the teaching process. In the 2nd phase of the research, conducted from September 2020 to January 2021, a survey of employers was conducted with the aim of collecting employers' opinions on the implementation of professional practice in companies, students' experiences, and possible improvements in the teaching process. Practice in companies from the business sector and then to the labor market. Phase 3 of the study consisted of summarizing the findings and implementing the findings in the implementation of practical teaching (e.g., students expressed dissatisfaction with professors leading field clases and not port/terminal employees afterwards there was new policy implemented saying that only company employees could lead field classes). For each of the forms of practical teaching examined/improved, a form was created to be signed by a person authorized at the faculty and by a person authorized to represent the company, with stated learning outcomes and ways to verify them. The last, i.e. 4th phase of the research is the implementation of the received guidelines into the teaching process, i.e. into the implementation of practical teaching, and finally the evaluation of the students' satisfaction with the implementation of a particular form of professional practice.

To determine the baseline status of professional practice implementation, the focus group method was used. A total of 50 students participated in the focus groups. The students selected as focus group participants were 1st and 2nd year graduate students from all 5 study programs. In order to obtain the most accurate research results, only students who had completed all forms of practical training at the time of the focus groups and who could provide answers about whether such a form of teaching occurs in their program of study and about the advantages or shortcomings of a particular form of practical teaching participated in the focus groups. In order to get a more comprehensive picture of studies at the Faculty of Maritime Studies in Rijeka, all study programs were considered in order to define the differences and inequalities between them and to try to reduce and suppress them. Students focused on different forms of professional practice implementation in the focus groups: guest lectures, practicums, field classes, working on a simulator, navigation practice, training grounds, professional practice with employers. The recorded interviews lasted an average of 10 minutes. This research phase represents the starting point for the improvement of all types of professional practice modalities conducted at the Faculty of Maritime Studies up to that point.

To provide a starting point for evaluating professional practice in maritime organizations, employers were surveyed. In order to obtain the most relevant information possible for the Faculty of Maritime Studies, the Pandora project manager sent an email to the companies with a brief explanation of the survey. The survey was completed by 33 companies. The companies that participated in the survey are organizations whose activities are closely related to the maritime sector and transportation, mainly logistics, cargo transportation, maritime agencies, seafarers' employment agencies and the like. The companies that participated in the survey have employed students of the Faculty of Maritime Studies or have had interns in their companies and therefore can provide relevant and accurate information when it comes to evaluating certain knowledge and skills of the students of the Faculty of Maritime Studies. The survey was resolved relatively quickly, contained a total of 27 questions, and was created using Google forms.

The Pandora project also conducted a survey on satisfaction with the various forms of professional practice: field classes, simulator exercises, practicum, and navigation practice. The questionnaires were prepared in paper form at the beginning of the project implementation and the questions for each questionnaire were adapted to the form of professional practice.

3 OBTAINED GUIDELINES FOR IMPROVING PROFESSIONAL PRACTICE

Considering the focus groups conducted with students by lecturers from the Faculty of Maritime Studies at the University of Rijeka and the analysis of the questionnaires filled out by employers, the following conclusions can be drawn depending on the form of professional practice.

The students' opinions are listed below. The students expressed their own opinions about what needs to be improved in certain forms of professional practice.

In order to improve the teaching process and the process of acquiring practical knowledge based on the opinions of students, guidelines were created to improve certain forms of professional practice, which were then implemented in the implementation of professional practice at the Faculty of Maritime Studies (changes in italics were implemented).

It was concluded that it is necessary that: [15]

- Navigation practice
  - increase the duration of the navigation practice (in hours and days) - *increased from 2 to 5 days*
  - adapt the study programmes to navigation practice and provide better theoretical preparation for it – *teachers are instructed to pay more attention to the connection of theoretical and practical knowledge*
  - in study programmes where navigation practice is not carried out on board but in maritime companies, the proportion of practical work must be increased – f*or LMMT, TOT study programs more frequent practicums and field classes, for MEET and MEMT study program, field classes to shipyards and practicums*
- Simulator work
  - to increase the number of hours of practice in the courses where the simulator is used and to include the use of the simulator in a larger number of courses – *procurement of 2 new simulators: loadmaster simulator and collision avoidance simulator, development of simulation software for maritime transportation and logistics business processes for LMMT study program*
  - to increase the number of hours or organize additional groups to have enough time for students' questions - *mandatory additional repetition by students in courses that have simulators or laboratory exercises)*
  - to reduce the number of students in the groups to increase the quality of teaching and facilitate mastery of the material - n*umber of students up to a maximum of 15 per group*
  - for the study programs Logistics and Management in Maritime Industry and Transport and Technology and Organization of Transport, it is necessary to introduce different simulators in the previous years of study and not only in the 5th year – d*evelopment of simulator in progress and planned use in 3rd year of undergraduate study*
  - as several simulators are outdated, newer simulators need to be procured – *two new simulators procured and a third in progress*
- Polygon / practicum work
  - increase the number of hours - *more frequent practicum, min. 1x per semester for all study programs*
    in study programmes where there are no practicums, it is necessary to design them and include them in the curricula – *practicums available in all study programs in ac. yr. 2020/2021*
  - invite experts from maritime companies to present the programs they use in their workplace *– in ac. yr. 2020/2021 held min. 1 presentation held per semester*
- Field classes
  - increase the number of field classes - *increased number of field classes, in ac. yr. 2020/2021*
  - organize the field classes better – *learning outcomes and evaluation methods planned and students encouraged to participate in field classes*
  - organize the field classes so that they are led by company staff and based more on practical examples than theory – *all field classes must be led by company staff who use practical examples*
  - in areas of study where field classes are not held, it is necessary to start conducting field classes *– field classes have been started in all study programs.*
- Professional practice in a company from the maritime industry
  - professional practice in the company has not been carried out and an introduction is required - *professional practice included in the study programs: LMMT and TOT*
  - unnecessary learning of a large amount of theory in the courses, which the students then cannot apply anywhere – *more frequent implementation of various workshops with the aim of acquiring practical knowledge of students*
  - it is necessary to create a certain database of companies offering internships to have an

up-to-date offer of companies offering internships in one place – *created a database of over 30 employers offering internships in 2 years*
  - due to the lack of professional practice, students feel inadequately prepared for the labour market - *solved with an increase of practical teaching in all study programs*

- Guest lectures
  - organize guest lectures more often - *organized 35 guest lecturers per year in all fields of study*
  - guest lectures based on practical examples from practice instead of theory - *encouraged the use of practical examples and the solving of everyday problems in teaching*
  - lecturers should use up-to-date information and talk about current events in the maritime world – *promoting peer-to-peer reviews to ensure a high-quality teaching process*
  - it would be very desirable if lecturers came from the real sector closely related to the area they are teaching - *visiting lecturers work in companies where students may be employed after graduation*

In addition to the students surveyed, employers also had the opportunity to express their opinion on the implementation of professional practise, using a questionnaire sent by e-mail to partners from the business community. The companies thus expressed their own opinion on the advantages and disadvantages of the implementation of professional practise, on the competences of the students coming to professional practise and on the knowledge areas that need to be improved.

The employers' opinions are shown in the table below. For each question, the answers and percentages are listed, ordered from the highest number of votes (highest percentage) to the lowest, i.e., the least important according to the employers' opinion.

QUESTION	**POSSIBLE ANSWERS**	**PERCENTAGES**
What are the main disadvantages of pursuing a professional practice?	No errors	20
	Inadequate resources of the employer for the smooth running of the professional practice.	14,29
	Insufficient duration	11,43
	Excessively long duration of professional practice	8,57
	The need to invest time and knowledge in students who are not motivated	5,71
	Unfamiliarity with the applications	2,86
	Lack of feedback from professors/faculty	2,86
	Lack of motivation on the part of the employer	2,86
	Employment law	2,86
	The fact that professional practice is not paid	2,86
What opportunities do employers see to improve professional practice?	Strengthening collaboration between companies that provide professional practice for students and faculty	25,71
	Inability to provide an answer	14,29
	Increasing the number of hours for of professional practice	11,43
	Financial support for companies that offer professional practice	8,57
	Greater independence for students in their work	8,57
	Encouraging companies to participate in the professional practice program	5,71
What areas of knowledge do employers think could be added/improved?	Knowledge of how maritime stakeholders function and operate	34,29
	Theoretical knowledge	20
	Customs regulations and taxes	14,29
	Did not answer / cannot be determined	14,29
	Communication and organization	8,57
	Working in specialized software	8,57
	Working with hand tools	2,86
	Practical knowledge	2,86
List activities to improve professional practice where companies might be	Inability to give an answer	34,29
	Professional and practical training of employees	20
	Integration in specific courses	11,43
	In all the above aspects	8,57

interested in working with the Faculty of Maritime Studies	Computer literacy of students	8,56
	Mediation in the employment of seafarers	2,86
	EU projects	2,86

Table 1 Results of a survey conducted in cooperation with employers

From Table 1 the main results of the survey can be seen. The most interesting conclusions after the survey have been summarised in the following short highlights, and italics highlight changes introduced:

- it is necessary to provide resources to employers so that more students can be sent into professional practise - *a greater opportunity to customize the time employers allow students to engage in professional practice, IT equipment provided by faculty as needed, all necessary documentation, and work diaries also provided by faculty*
- it is necessary to adjust the duration of professional practise and help employers as much as possible - *companies can determine which period of the month/year it is easiest for them to admit students for professional practice. Ultimately, students must complete a total of at least 10 work days on terms agreed upon with the employer*
- it is possible to improve the performance of professional practise through increased cooperation between companies from the business sector and the faculty – e*ncourage employers to mentor students as they write their bachelor's and master's theses, to take part in writing academic research papers, to participate in career day, and to recruit students directly from faculty*
- it is necessary to provide the faculty with certain benefits for companies offering professional practice, such as: financial support, participation in EU projects, participation in teaching as guest lecturers – m*ore than 20 business partners participate in EU projects*
- Employers are encouraged to participate as guest lecturers in courses that can directly impact students' knowledge and skills - a*s part of improving theoretical knowledge, it is necessary to additionally involve employers as guest lecturers in the teaching process to fill this knowledge gap among students.*
- it is necessary to raise awareness of the importance of increasing the level of independence in the workplace - *organize various workshops such as "How to write a resume?" or "How to shine in a job interview?" with the aim of acquiring practical skills.*
- new ways must be found to improve the practical skills of students - *more frequent workshops and field classes, procurement of new simulators*
- in the context of lectures at the faculty, it is necessary to better monitor the adoption of the processed results and to consult with the companies where the professional practise was carried out, which results need to be improved or supplemented – c*reated a survey to examine student satisfaction with the implementation of the practical part of the class.*

- In the context of teaching, examples from practise must be used to improve knowledge of the functioning and work of maritime stakeholders considering that most employers have expressed that these skills are among those that students lack, it is necessary to introduce courses that deal more with the relationships between maritime stakeholders so that students have a shorter time to adapt to the labor market. - *It is also important to consider that the issues of how maritime stakeholders work and act are complicated and that more knowledge and resources need to be invested in improving this segment of knowledge*
- provide the company with opportunities for professional development of employees - *offering the opportunity to participate in free courses held at the Faculty of Maritime Studies for employers who provide some form of professional practice for students.*

4 ANALYSIS OF QUESTIONNAIRE RESULTS OBTAINED AFTER CONDUCTING IMPROVED PROFESSIONAL PRACTICE FORMS

With the aim of improving the existing models of professional practice implemented at the Faculty of Maritime Studies, University of Rijeka, a questionnaire for different forms of professional practice was created. Each of the questionnaires was adapted to the form of professional practice to obtain the most accurate results. The results of surveying students by individual forms of professional practice are presented below.

The questionnaire was developed primarily to survey student satisfaction with the improved forms of

various forms of professional practice. It used guidelines obtained after processing the results of focus groups and surveys of employers. In addition to students who participated in the focus groups, students from all other fields of study had the opportunity to participate in the following questionnaires based on the form of professional practice in which they participated. The goal of the questionnaire was to assess student satisfaction with the implementation of the enhanced forms of professional practice at the Faculty of Maritime Studies, especially the part related to the competencies of the leaders/ lecturers, usefulness, connection with the study program, etc.

First, the results of the student survey on satisfaction with field classes are presented. Field classes were conducted in all 5 study programs of the Faculty of Maritime Studies in Rijeka. The field courses were held in groups of max. 20 students per group. A total of 4 field classes were conducted in the following facilities: Shipyard, Container Terminal, Port Authority and Cruise Ship. The questionnaire consisted of nine questions asking students to rate the following statements on a scale from 1 - lowest score to 5 - highest score. A total of 84 students completed the questionnaire.

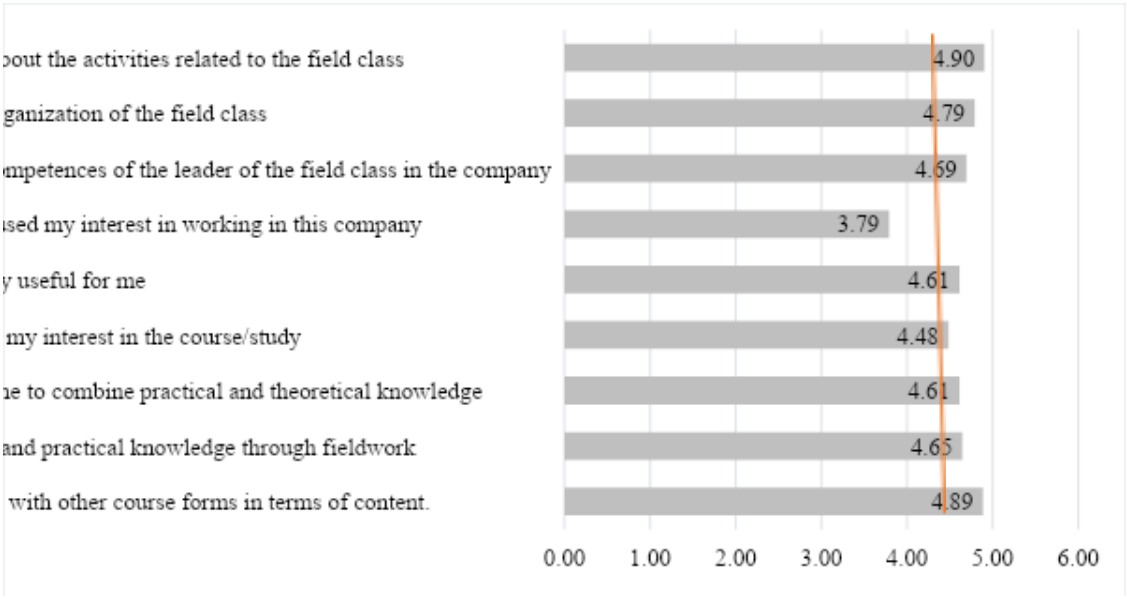

Chart 2 The results of the students' evaluation of field classes

Chart 2 shows student satisfaction with field classes. First, it is important to note that the average score of the field classes is excellent with an average of 4.6 (orange vertical line). In addition, the students with the highest scores answered the questions about timely information about the activities related to the field classes and about the correlation of the field classes with the course (average score 4.9). Students were also satisfied with the organization of the field classes, which they rated 4.8. Students rated interest in working in the company where the field courses were held with the lowest average score of only 3.8. They also rated increased interest in the course or study due to the field experience with a score of 4.5.

In addition to the field classes at the Faculty of Maritime Studies, University of Rijeka, the evaluation of the simulator courses was conducted among the 2nd year students of the graduate study Nautical Studies and Maritime Transport Technology The evaluation was carried out in the course "Technology of Bulk and Special Cargo Transport", where the exercises took place on a LOADMASTER X5 simulator, the procurement of which was funded by the Pandora project.

The user interface of the program allows easy use for all users, regardless of their previous knowledge. By working with the program, students get the opportunity to plan and schedule cargo, create a plan for loading and unloading cargo, but also all other options included in the program that are important for trip planning. This simulator was purchased in 2021 and is a novelty at the Faculty of Maritime Studies in Rijeka, on which the students were allowed to work for the first time during this research. The questionnaire consisted of nine questions where the students were asked to rate the statements below on a scale from 1 - lowest score to 5 - highest score. A total of 34 students completed the questionnaire.

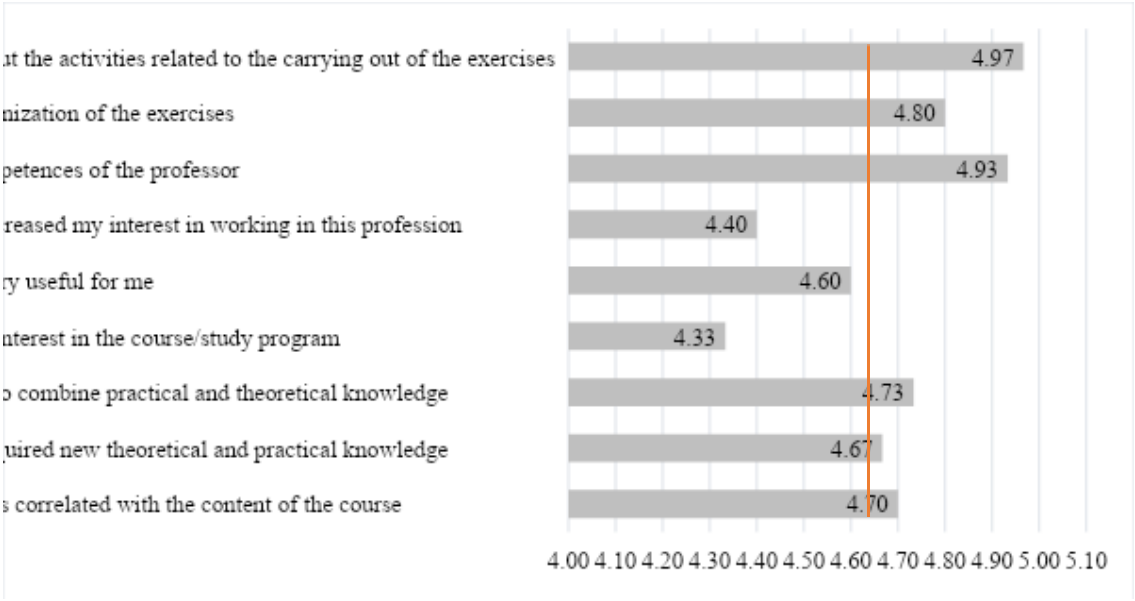

Chart 3 The results of the students' evaluation of the exercises on the LOADMASTER X5 simulator.

Chart 3 shows student satisfaction with the exercises on the cargo handling simulator. Although exercises are conducted on many other simulators in the Nautical Studies and Maritime Transport Technology study programme, such as GPS simulators, GDMSS communication equipment simulators, ECDIS, etc., this research was conducted exclusively after the use of LOADMASTER X5 simulators as a new addition to the faculty. The average overall score given by students for the exercises on this simulator was 4.68, and the highest score, with a value of 4.97, was satisfaction with the timely information about the exercises on the simulator. Also, with a high score of 4.93, they rated the competencies of the instructor at the simulator. The lowest score of 4.33 was increased interest in the course or study after the simulator exercises. With a score of 4.40, they rated the increased interest in working in the profession after the simulator exercises.

In addition, internships practicums were conducted as part of several graduate courses. The aim of the practicum was to expand the theoretical knowledge acquired during the semester by participating in individual courses with practical knowledge. The practicum was held by a total of 8 experts from 7 different institutions as follows: IT Companies, Shipyards, Container Terminals and Logistics Companies. A total of 7 workshops were held with a total of 92 students from the Faculty of Maritime Studies in Rijeka. At the end of each practicum, the students evaluated the practicum using a questionnaire consisting of 9 questions. It was possible to round the points on a scale from 1 - lowest score to 5 - highest score.

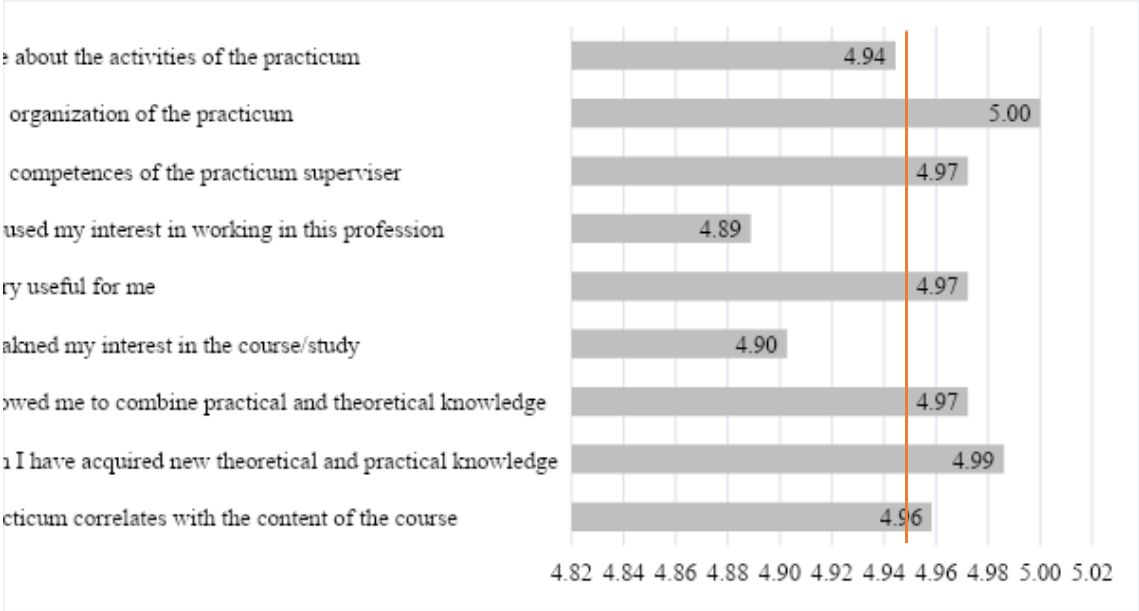

Chart 4 The results of the students' evaluation of the practicums

Chart 4 shows the students' satisfaction with the Practicums. First of all, it is important to note that prior to the evaluation in the focus groups, where the status of implementation of a certain form of professional practice at the Faculty of Maritime Studies in most of the study programs was determined, the form of professional practice - practicums - was not carried out. It is assumed that this is the reason why the average score of practicums carried out is so high, namely 4.96. It is important to mention that all students are completely satisfied with the organization of the practicum (5.0) and, more importantly, extremely satisfied with the newly acquired theoretical and practical knowledge, which they evaluate with an average score of 4.99. Acquiring new theoretical and practical knowledge is one of the most important reasons for participating in this form of professional practice. On the other hand, the students gave the lowest marks of 4.89 and 4.90 for the increased interest in working in the profession after the internship and the increased interest in the course and study programs.

In addition, another questionnaire was developed to help faculty evaluate student performance during the Navigation Practice course. The Navigation Practice course is taught in the 3rd year of the Nautical Studies and Maritime Transport Technology undergraduate program. The sailing practice is conducted on the vessels "Queen of the Sea" and "Vila Velebit". Navigation practice lasts at least 2 days (during COVDI-19) up to a maximum of 5 days if circumstances are normal. During the navigation practice students spend 5 days on the training vessel accompanied by 2 instructors to perform certain tasks and acquire various theoretical and practical knowledge.

The aim of the navigation practice is to familiarize students with real ship systems and equipment, life on board and their future duties and tasks as deck officers, mechanical and electrical engineers.

To assess the extent to which the set course objective has been met, a form has been developed to evaluate the knowledge acquired by the students. The Navigation Practice course is evaluated upon completion, and the instructor chooses between two options: whether the student has met a specific evaluation criterion (at least 50%). For a positively evaluated Navigation Practice course, all the following criteria must be met:

1. Acquisition of the ability to navigate the ship with advanced knowledge of each enclosed space of the ship and all systems on the main deck
2. Knowledge of the navigation bridge with advanced proper use of electronic navigation equipment
3. Knowledge of the procedures for performing terrestrial navigation
4. Knowledge of the procedures for performing electronic navigation
5. Knowledge of the procedures for performing astronomical navigation
6. Calculation procedures and knowledge of the basic criteria for the transverse and longitudinal stability of the ship
7. The procedure for abandoning ship with knowledge and proper use of life-saving appliances

8. Procedures for conducting a fire drill using firefighting equipment and rescuing a casualty
9. Proper use of communications equipment in the GMDSS system with knowledge of the ship's communications procedures
10. Proper performance of mooring and unmooring the ship and knowledge of the ship's mooring equipment
11. Proper performance of anchoring the ship and knowledge of the ship's anchoring equipment
12. Proper interpretation of rules for avoiding collisions under all circumstances
13. Knowledge and application of the ISM code and management, crew management and teamwork

Each of the above criteria is rated as satisfactory or unsatisfactory by the professor. In addition to the skills assessment questionnaire, the methodology included a descriptive document describing each skill/knowledge assessed and indicating the levels of performance.

The navigation practice in the academic year 2020/2021 was conducted on the training vessel "Vila Velebit". To make the navigation practice as appropriate as possible, considering the epidemiological conditions, the students were divided into 5 groups (11-14 students per group) and accompanied by 2 professors. A total of 64 students and 8 professors participated. In addition to the students and professors, there was a crew on board that was always available to answer student questions. All students who participated in the navigation practice successfully passed the course.

5 CONCLUSION

The promotion, development and continuous improvement of professional practice and practical teaching as an integral part of studies, i.e. the acquisition of knowledge and skills through professional learning, is an ongoing process through which the Faculty of Maritime Studies, as an institution of higher education, seeks to expand the theoretical knowledge acquired by students in classical forms of teaching and, at the same time, to test the acquired knowledge in the working environment through practical tasks and examples. Also, to achieve the highest possible level of employability of students after entering the labour market, which today is more dynamic and technologically demanding, it is necessary to provide students with the opportunity to acquire various knowledge and skills to realize their full potential and thus facilitate employment in the labour market.

Increasing student competencies benefits not only students and faculty, but also businesses companies in the following ways: for the students, it becomes easier to transform their theoretical knowledge into practical knowledge, thus increasing their competence and their chances on the labour market; for the faculty, it is promoted and its reputation grows; for the companies, numerous doors may open for cooperation with the faculty in terms of professional practice, giving guest lectures or hiring students from the final year of study. In any case, the practical knowledge and its implementation in teaching and teaching process brings numerous benefits to all parties.

Using focus groups with students to determine the current level of representation of certain forms of professional practice and a questionnaire completed by employers, conclusions were drawn on how to improve various forms of professional practice at the Faculty of Maritime Studies, University of Rijeka to increase the competencies of all students involved.

An important contribution to the creation of guidelines for the improvement of professional practice certainly came primarily from the students who drew attention to the lack of implementation of all forms of professional practice on land, i.e., in the two land-based degree programs Logistics and Management in Maritime Industry and Transport, and Technology and Organization of Transport. In addition, there were important contributions from employers who did not have the opportunity to participate in shaping the implementation of professional practice, providing guidance on the implementation of professional practice, and ultimately influencing the quality of the various forms of professional practice.

It is interesting to note that most employers want to be involved in the selection of candidates who will perform professional practice in their company. Moreover, companies that participate in the implementation of professional practice in higher education expect certain benefits, such as: financial support, participation as partner institutions in projects financed by EU funds, participation in teaching as guest lecturers, etc. The most important conclusion is certainly that it is possible to improve the performance of all forms of professional practice both at the faculty and outside the faculty through increased cooperation between companies from the business community and the faculty, and that companies from the business community are interested in participating in this process.

Based on guidelines obtained after focus groups with students and analysis of questionnaire results, a methodology was developed to assess student satisfaction with specific forms of professional practice, as well as guidelines for faculty in reviewing the level of learning outcomes.

Based on the methodology developed to assess student satisfaction with the implementation of various forms of professional practice. The following forms of professional practice were evaluated: field classes, exercises on a simulator, practicums organized within and outside the faculty, navigation practice on the school ship. Based on the results of the questionnaire that the students filled out after completing each form of professional practice, average values for student satisfaction with the different forms of professional practice were obtained, as well as indications of what needs to be improved:

- increase student interest in implementing various forms of professional practice.
- funding excursions outside the place of study through EU projects.
- involve students in the selection of institutions to be visited during field classes.
- conduct practicums at least once per semester.
- strengthen the employer-professor-student relationship to increase the number of bachelor's and master's theses in collaboration with industry.
- purchase new versions of simulators and use them in the teaching process.

To evaluate the satisfaction of employers with students who have completed a professional practice in their company, the next step will be to create a questionnaire on the satisfaction of employers with students who have completed a professional practice.

With the goal of opening more opportunities for students to acquire practical skills during their studies, the implementation of the Pandora project will be ensured to enable students to acquire practical skills in order to be better prepared for the market and to acquire a higher level of skills to perform various activities.

In conclusion, the outcome of any form of professional practice is a measurable and clear benefit for the *student as well as for the faculty and the employer. The Faculty of Maritime Studies in Rijeka would like to open more opportunities for the acquisition of practical skills during studies. This is ensured by the implementation of both the Pandora project and numerous other European projects aimed at enabling students to acquire practical skills, better preparation for the market and a higher level for performing various activities in the profession.*

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