



INNOVATIVE PERSPECTIVES FOR TRAINING OF THE NEW GENERATION IN THE BLUE ECONOMY

Lidia Slawinska, Escola Europea - Intermodal Transport, Moll de Barcelona Nord s/n, Terminal Drassanes, 08039 Barcelona, Spain, lidia.slawinska@escolaeuropea.eu, + 34 93 298 60 70

Raquel Nunes¹, Escola Europea - Intermodal Transport, Moll de Barcelona Nord s/n, Terminal Drassanes, 08039 Barcelona, Spain, raquel.nunes@escolaeuropea.eu, + 34 93 298 60 70

Eduard Rodés, Escola Europea - Intermodal Transport, Moll de Barcelona Nord s/n, Terminal Drassanes, 08039 Barcelona, Spain, eduard.rodés@portdebarcelona.cat, + 34 93 298 60 70

ABSTRACT

The current rate at which technological innovation and adaptations are evolving is exponential, and thus very difficult for humans to follow. This is particularly true when dealing with professions in the Blue Economy, which hosts the majority of the global international trade. This has brought the need to adapt the training programmes of professionals to help counter this reality and thus better prepare the individuals for the industries. This study aims to show that when synergies are created in a network of training centres and companies in the sector within a country or between different countries, the result is rapid learning and the creation of innovative training programmes, which better prepare the professionals for the jobs of the future. To establish this, the Escola collected data from training centres and companies that frequently collaborate in the courses. The premise for the study was made that the current courses offered by the Escola are innovative and experiential in nature, and thus by internationalising and mixing the groups, the training is more successful. The study took into consideration existing innovative courses of the Escola in the Mediterranean region, but the results can be extended to larger geographical areas. It was concluded that it is important to develop tools and course models for training centres and companies to follow, and to ensure that more students have access to them. The industry actors may use the results of this project to form the basis of future course models to create job opportunities through the networks shared between professionals of the sector and potential employers.

Keywords: Experiential learning; Innovative training; Blue economy.

1. INTRODUCTION

“Give a man a fish, and you feed him for a day. Teach a man to fish, and you’ve fed him for a lifetime” (Jian, 2009: 163). This Chinese proverb, usually assigned to Confucius, holds as much truth today as it did centuries ago. A vast amount of theories on teaching methodologies exists today that tries to tackle the question of what is the most effective process to ensure maximum knowledge retention. The incontestable truth is that without experience and practical training, the success of learning is greatly diminished. The proverbial fisherman could only truly learn to feed himself and his family after experiencing the process himself, therewith ensuring long-lasting success.

In today's rapidly changing world, the role of a professional is constantly evolving. The modern-day freight forwarder does not need to deal with as many manual tasks as his predecessor of 5-10 years in the past would. The tasks he undertakes today will almost certainly be considered obsolete by his successors. The classic, theory-based educational programmes of today are not sufficiently equipped to prepare young professionals for what lays ahead. Students and professionals alike need to be aware of the conditions that await them in real-life situations,

¹ Author for correspondence and presenting the paper

and they need to be prepared for the technological and social challenges that they will inevitably encounter. This is most true of the people involved in the Blue Economy. Competition between logistics chains, the internet of things, autonomous processes, robotics, drones, artificial intelligence systems, blockchain operations, are only some that are changing the nature of the maritime industry, and the educational opportunities need to keep up.

This paper aims to show that when synergies are created in a network of training centres and companies in the sector within a country or between different countries, the result is rapid learning and the creation of innovative training programmes; ones that can adequately prepare individuals for real-life professional situations. First presenting an analysis of available literature on the theory of innovative and experience-based learning, and the Blue Economy itself, the paper will then introduce and analyse an empirical study carried out using data taken from surveys of the alumni of the Escola Europeia – Intermodal Transport (Escola), representatives of research and educational institutions that work with the Escola, and companies active in the industry that frequently collaborate in the Escola's programmes. The surveys received feedback from individuals from 18 different countries, allowing a comparison of the different perceptions between different countries. It will conclude with our recommendations for the training programmes that could be developed for professions of the 21st century in the Blue Economy with a focus on the Mediterranean, but with the potential to be extended to broader geographical regions.

2. LITERATURE REVIEW

The human desire to procure new information and expand one's mind is not a characteristic that is limited to young children in their formative years. Young adults and professionals across all disciplines strive to increase their knowledge by looking for new and relevant training opportunities, not only to satisfy a need within but to also gain competitive advantages over their peers. Nevertheless, the traditional approach taken to educate has undergone a significant shift. The classical theory-based learning is no longer sufficient to prepare individuals for what awaits in the future. For decades, universities and training institutions alike have been searching for the 'ideal model' that would successfully prepare students for the workforce. In the early 2000s "*Milner and Stinson (1995), among others, argued that due to exponential changes in our society, we needed to rethink the nature of higher education, both content wise and pedagogy wise. In their view, higher education should pay much more attention to how students could adapt – as learners while in college and as continuing learners after college – to changing societal demands*" (Barnocelli et al. 2014: 10-11).

This phenomenon is perhaps most visible in the transport sector. As new technologies arrive on the scene, they change procedures, equipment, and timespans. European (and international) governments have tried to adapt legislation to support the environmental protection initiatives by sanctioning the use of traditional and overly polluting fuels, forcing actors in the supply chain to look for alternatives. "*Gijssels and Milner (2009) argue[d] that many professional programs deal with short life cycles of knowledge due to ongoing innovations in practice*" (Barnocelli et al. 2014: 16).

When thinking about innovative training practices, it is important to distinguish between the different concepts that inevitably crop up. For example, for some innovative training techniques may not involve alternative and new training procedures, but may require information about new technological tools and advancements.

2.1. Theory-based learning

Theory-based learning is perhaps the oldest and one used most frequently by traditional educational institutions. The article provided by Simply Compliance ([The Most Effective, 2018](#)) lists the following as some of characteristics of this approach:

- Relying heavily on traditional classroom items, including blackboards. Though out-dated, this method is quite useful when the students need to ‘participate’ by answering some problems in front of the class,
- Relying on the overhead projector / PowerPoint presentations,
- Demonstrating certain aspects taught in the class through instructional videos,
- Instructors or guest lecturers may rely on story-telling and anecdotes to illustrate the points made.

Though out-dated, the traditional theory-based approach has many advantages that have proven successful through the ages. It is a very efficient method when a lot of material needs to be presented to both large and small groups. Additionally, a sociable and gregarious lecturer may appeal to many students through his words, and thus inspire them for years to come.

2.2. Experiential Learning Theory

One of the most prominent researchers in the theory of experiential learning is David Kolb. Having started his company *Experience Based Learning Systems, LLC* in the 1980s, Kolb and his wife have provided a platform for an academic body of research on experiential learning theory (ELT) to flourish. Kolb defines ELT learning as “*the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience*” (Kolb, 1984: 41). Kolb based his theory on the “*emphasis on the process of learning as opposed to the behavioral outcomes [which] distinguishes experiential learning from the idealist approaches of traditional education and from the behavioral theories of learning created by Watson, Hull, Skinner, and others*”. He argued in the 1980s that this theory rests “*on a different philosophical and epistemological base from behaviourist theories of learning and idealist educational approaches (...). Ideas are not fixed and immutable elements of thought but are formed and re-formed through experience. (...) No two thoughts are ever the same, since experience always intervenes*” (Kolb, 1984: 26).

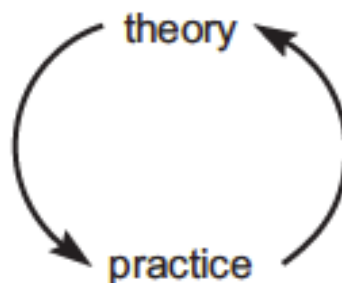
Since the 1980s, this growing body of research has contributed to the expansion of knowledge on the implications of experiential approaches. In an empirical study carried out in 2002, Mainemellis et al. set out to analyse the different characteristics of balanced and specialised experiential learning styles. They proved that those approaches that balanced experience with theoretical knowledge showed “*greater adaptive flexibility in responding to experiencing and conceptualising learning contexts*” (Mainemellis et al., 2002: 5). Their analysis ultimately concluded that “*on th[e] experiential learning dialectic, balance is related to flexibility and specialization is related to skill development*” (Mainemellis et al., 2002: 22). This is particularly true when it comes to skills crucial to job performance. Although there is no one approach that can be applied to all industries, “*a number of authors (e.g. Ilgen and Pulakos, 1999; Pulakos et al., 2000; Thatch and Woodman, 1994) have emphasized in recent years that job performance is becoming increasingly dependent on the ability of managers to adapt to uncertain environmental conditions, changing technologies, corporate restructuring, mergers, or culturally diverse markets and work contexts*” (Mainemellis et al., 2002:24).

More recently, the work of scholar Colin Beard focuses on emphasising the advantages of experiential learning in today's professional environments. In the second chapter of his book *Experiential Learning*, Beard states that “*learning from experience is one of the most fundamental and natural means of learning available to everyone*” (Beard et al., 2006:15). Though brief and perhaps self-evident, this quote best describes the main advantage of the experience-based learning. It is available to everyone, and it need not preclude any previous theoretical experience.

2.3. Innovative learning

The argument made in this paper is that the best approach to be used in the Blue Economy is a combination of the approaches listed above (sometimes also referred to as blended learning). Innovative courses, when successfully structured, contain both elements of the traditional and the experiential models, maximising knowledge retention and providing memorable experience for the learners. Barnocelli et al. identified various innovative methods for training, including “*teamwork, fieldwork, special expert sessions, simulations, learning games, project-based learning, work-based learning, role-plays, distance learning, peer tutoring, internships, students’ volunteering, and exchange programmes*” (Barnocelli et al., 2014: 90). In a successful training programme, one does not exist without the other; the theoretical and practical aspects complement each other perfectly and operate in almost idyllic harmony:

Figure 1: The relationship between theory and practice



Source: Beard et al. (2006:18)

2.4 Blended learning approaches

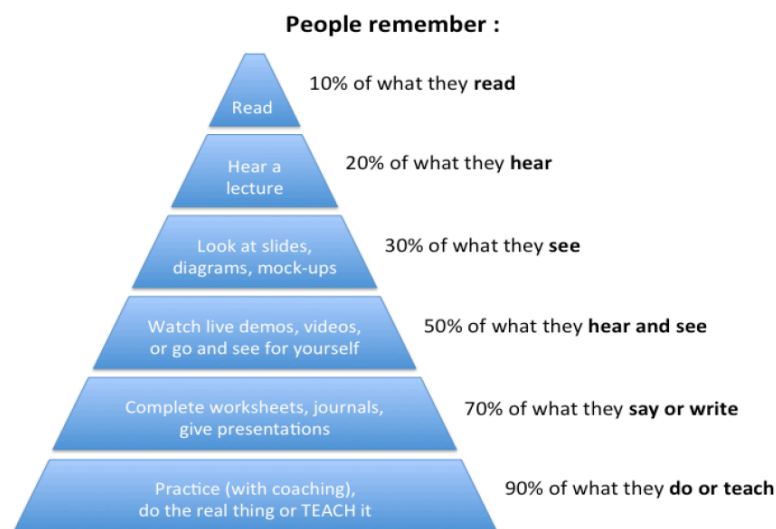
As previously emphasised, experience is the basis of all learning (Beard et al., 2006: 19). The unexperienced young professional entering employment in the Blue Economy today may find the amount of skills and characteristics required of new recruits overwhelming. Since the turn of the century, “*socioeconomic changes have led to new and pressing demands on educational institutions and other organizations to become more efficient in promoting skill development across the professions*” (Dall’Alba and Sandberg, 2006: 383). Young graduates increasingly face more pressures to have the skills needed to carry out operations fresh out of graduate school; skills that can only be acquired ‘on the job’. Dall’Alba and Sandberg analysed the available classical educational programmes in the second half of the 00s and, among other findings, concluded that that “(1) *professional curricula should focus on understanding practice instead of giving students tools to work in practice, [and] (2) professional programs*

should develop pedagogies that focus on the learners – instead of curricular contents only (...)" (Barnocelli et al., 2014: 16).

Another advantage of combining practical experience with the theoretical models is the inevitable connection between academia and industry actors. As Barnocelli et al. further recognised, *"the inclination of some teachers to link core concepts and theoretical notions taught in classroom with practical experiences – such as fieldwork, special expert sessions, and work-based learning – [should be] welcomed and encouraged as a way to connect academia with business"*. Furthermore, this merging of the two worlds will pave the way *"towards alternative methodologies of active learning whose goal is to enhance students' participation and to create a more collaborative classroom environment"* (Barnocelli et al., 2014: 93). This in turn will produce prepared and enthusiastic professionals who are no longer intimidated by the unprotected and cold veneer of an unfamiliar professional setting.

Since its inception, the Escola Europeia – Intermodal Transport has relied on the internationally acclaimed model of the learning pyramid as a basis for structuring its training programmes. The model, in itself, does not call for the need for experiential learning, but it does clarify that individuals retain on average 20% information of a lecture, and an impressive 90% of an activity they participate in or experience.

Figure 2: The Learning Pyramid



Source: Palkmets (2014: 9)

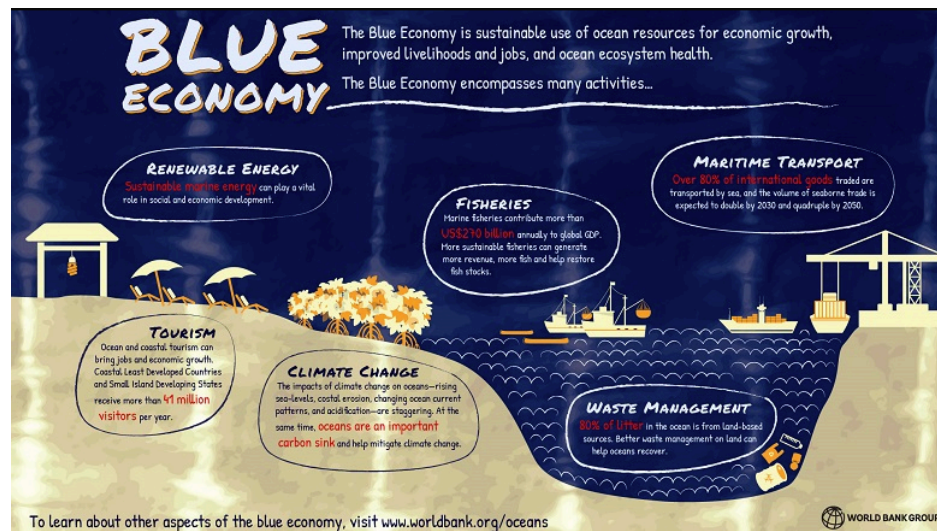
The Learning Pyramid model has first appeared in Edgar Dale's book *Audio-Visual Methods in Teaching* (1954). Simply by looking at the different levels in the pyramid it is evident that although *"seeing is fairly effective"*, it is *"doing and teaching [that represent] the best vehicles for learning and remembering (...)"* The idea is simple: *first see how something is done. Then do it yourself. And finally teach it to others"* (Palkmets, 2014: 9) through collaborative team work.

2.5 Blue Economy

Because of the different realities of every profession, no one unique different experiential learning approaches can be applied to all of the professional sectors. This paper focuses

specifically on the professions that are active in the Blue Economy. The World Bank defines the Blue Economy as a “sustainable use of ocean resources for economic growth, improved livelihoods, and jobs while preserving the health of ocean ecosystem” (World Bank, 2017). It is “a natural next step in the overall conceptualization and realization of sustainable human development. (...) Simply put, it is the utilization of ocean resources for human benefit in a manner that sustains the overall ocean resource base into perpetuity” (Hudson, 2018).

Figure 3: What is the Blue Economy Infographic



Source: The World Bank (June 6, 2017)

This need to pay more attention to our oceans is not a new concept, but it is only on the verge of the new millennium that governments and organisations alike have actively begun to modify their modes of operation to ensure the sustainability of existing water bodies. In 2014, the United States Secretary of State John Kerry underlined this necessity: “Protecting our oceans is not a luxury. It is a necessity that contributes to our economy, our climate and our way of life. Working together, we can change the current course and chart a sustainable future” (Spalding, 2016: 2).

Humans have been using the waterways for centuries, but it is only in the recent years that this relationship has begun to undergo an exponential shift. Our “old ocean economy is adapting to respond to new demands, ecological needs, and the dynamics of global climate change” (Spalding, 2016: 3). Even though shipping is the most carbon efficient and ecological transport mode, it is still a significant emitter of CO₂ and acoustic pollution, among others. While shipping has increased in safety, oil spills are not uncommon (as evidenced recently by the recent MSC oil spill off the coast of Portugal in April 2019). To combat these challenges, the industry has turned to technological innovation, with new fuel alternatives being installed in fleets across the globe, new propulsion systems being developed, new recycling means established and new regulation brought into force to regulate emissions both at sea and during port stays (Spalding, 2016: 7).

What does this all mean in terms of job creation and professional readiness? Börner et al. identified that “there seem to be major discrepancies and delays between leading scientific research, job market needs, and educational content” (Börner et al., 2018). It is unclear today what jobs will still exist in 5-10 years’ time. The World Economic Forum published an article analysing the impact of technology and robotics on the jobs of the future, and concluded “in

purely quantitative terms [that by 2022], 75 million current job roles may be displaced by the shift in the division of labour between humans, machines and algorithms, while 133 million new job roles may emerge at the same time” (Ratcheva et al., 2018). Existing jobs will require very different skillsets when compared to today's. As such, the educational paradigm needs to shift – both in professional education programmes and in higher education institutions, to keep up with the rapidly changing landscape of the professions within the Blue Economy (and elsewhere).

3. METHODOLOGY

To find out what the optimal training approach for the Blue Economy is, three surveys were created which were sent out to three distinct groups within the Escola's community, namely: the Escola's alumni; representatives of educational institutions that have collaborated with or lectured at the Escola's courses; and professionals who regularly collaborate with the Escola's activities. The rationale behind the surveys was to try to ascertain whether the current programmes offered in the Mediterranean are effective and could serve as a basis for replication in other geographical areas. The Escola's courses (unique in their shape and structure in Europe) have been developed over the past decade with the support and advice of professionals from Shortsea Promotion Centres in Western Europe and logistics and shipping companies operational in the Mediterranean. Furthermore, educational institutions in Spain, Italy, France, Portugal and the Low Countries have sent teachers and representatives to either actively participate or passively observe the courses carried out. These international synergies have led to the constant evolution of the training programmes and the curricula. The surveys were designed to gather evidence to support this hypothesis by targeting groups that represented the three interest groups (students; educational institutions; professional representatives).

The groups targeted had to fulfil two previously established criteria:

1. They would have to have attended at least one of the Escola's courses. This ensured that there was a common element between all members of the sample.
2. They would have to have studied or been residents of different countries. This was deemed necessary to enable a comparison of perspectives between members of one country, and between different countries.

The surveys were prepared using Google's questionnaire platform (Google Forms) and disseminated to the groups using the mailing software *SendInBlue*. To help organise and categorise the results, three types of questions were defined: questions requiring a scoring answer were given answer choices on a scale of 1 to 5; questions identifying fixed answers or agreements were assigned multiple-choice answers (for example yes or no); and open questions calling for suggestions or opinions were given text field answer choices. In each survey, only one open question was allowed. This was done to lessen their number, and maximise the number of quantifiable responses, thus facilitating analysis.

One challenge that had to be overcome for this research was determining a representative sample size. This was crucial, as this would help “*generalize from a random sample and avoid sampling errors or biases. (...) [W]hat is important here is not the proportion of the research population that gets sampled, but the absolute size of the sample selected relative to the complexity of the population, the aims of the researcher and the kinds of statistical manipulation that will be used in data analysis*” (Taherdoost, 2017: 237). There are many formulas that could be used to help determine a statistically significant response rate, one of which was identified by H. Taherdoost in the article published in the *International Journal of*

Economics and Management Systems, which calculated that a sample size of 5000 (which would roughly correspond to the active alumni email addresses in the Escola's database) would require a minimum of 583 responses to hold statistical significance with a 5% margin of error. This was thus set as the goal for the responses from the alumni network, with a lower number (and a lower sample) for the responses from the university representatives, and for the sample of the industry collaborators of the Escola.

3.1. Surveys

The surveys were divided into two distinct sections – the first section collected geographical and demographical data of the respondents. The option for full anonymity was given, however requirements for the age group and country of residence of the respondent were set to make further analysis possible. The three surveys shared some similarities, but distinctions were made when posing questions about the experience of the respondent – an alumni representative would have a different impression of a practical workshop at a port terminal than an operational representative of said terminal. The questions were developed by the authors themselves. They were drafted to be made short and not complex, with the goal of not dissuading the potential respondents with the length and the question structure.

Titled *Innovative perspectives for training in the Blue Economy*, the questionnaires were precluded with a general definition of the concept of innovative learning to ensure that the respondents did not correlate the “innovation” aspect of the questions with technology:

‘This questionnaire aims to collect the opinions of the different actors involved in the creation, realisation and improvement of the Escola Europea’s courses. It aims to help us evaluate the success of the innovative courses of the Escola Europea, which have an unconventional structure and combine theory with hands-on practical experience, presenting the latest techniques and strategies used by key players from the transport industry in real-life scenarios. Your responses will contribute to our analysis and help us evaluate new lines of approach.’

There was a total of 14 questions sent to the alumni. The authors phrased the questions to ascertain whether the students felt that there was an added value benefit gained from the innovative courses. Whenever a more academic term was used in the phrasing (for example one question focused on heterogeneous work groups), a definition was provided. The final questions of the survey tried to identify what the students’ understanding of innovative courses was, and whether having attended such a course the respondents were more prepared for the work force.

The authors prepared a slightly shorter survey for the representatives of the educational institutions – these surveys comprised 11 questions. The main goal from these questionnaires was to understand whether the representatives felt that their needs and suggestions were consistently met by the Escola’s staff. This would give substance to the premise that the Escola’s courses were indeed shaped through collaboration and synergies formed over the years between the different centres.

The final questionnaire was sent to representatives of companies that have either assisted the Escola by teaching lectures or by providing access to their terminals and operational facilities. The authors of this paper have phrased these questions to try to identify whether the respondents felt that the course were beneficial to the companies, whether they appreciated the hands-on approaches of the programmes, and whether they felt that teaching students directly was better than teaching professionals wishing to broaden their pre-existing knowledge. The premise was

to find out whether the companies felt that their collaboration with a teaching institution aided in helping create well-prepared professionals in the sector.

3.2. Sample and Data

The sample was gleamed from the responses received from the database of Escola's alumni; a list of frequent collaborators; and representatives of educational institutions. The Escola's alumni base, after 10 years, is quite extensive, and there was an expectation of reaching a high response rate. Unfortunately, there were discrepancies in the email addresses (students who have attended the Escola's courses 5-10 years prior may no longer be using the emails provided at the time of registration for example), and the response rate was quite a lot lower than anticipated.

For the first group of the alumni, the target number of 583 was not reached. The response rate to the mailers sent out was lower than expected, and a follow-up email resulted in a few added responses. Out of 6880 recipients of the Escola's mailer, 175 responses were registered by Google. Using the Taherdoost's formula this gave us a confidence margin of error of $\pm 7,314\%$. Though not ideal, the results still yield a representative sample and could be used for measured generalisation about the innovative training methods in the field.

The second group analysed included members of educational institutions that frequently worked with or sent students to the Escola's courses. The survey was disseminated to 72 contacts taken from the Escola's CRM database. Seventeen responses were recorded by Google, resulting in a margin of error of $\pm 17,56\%$. This represents a significantly larger error margin than the alumni group. Due to time constraints, it was impossible for the authors to follow-up with the representatives by phone to try to improve this. As the list is small, in the future, a follow-up qualitative study could be carried out to further investigate the impressions of that group.

The final group comprised representatives of commercial companies or businesses active in the maritime sector, who have collaborated with the Escola regularly in the past. Out of a group of 116 contacts, 21 have responded to the surveys yielding a margin of error of $\pm 16,31\%$. The time constraint further hindered the authors' ability to follow-up and convince the collaborators to respond to the short questionnaire.

The authors recognise that the sample sizes are not ideal, as they do not yield that craved-for $\pm 5\%$ margin of error. However, the results are still valid and can help get an understanding and an overview of the perspectives on training techniques and recent experiences of the actors currently active in the Blue Economy, and provide a basis for the conclusion that collaboration and synergies between different parties lead to innovative training methods and better prepared professionals in the sector.

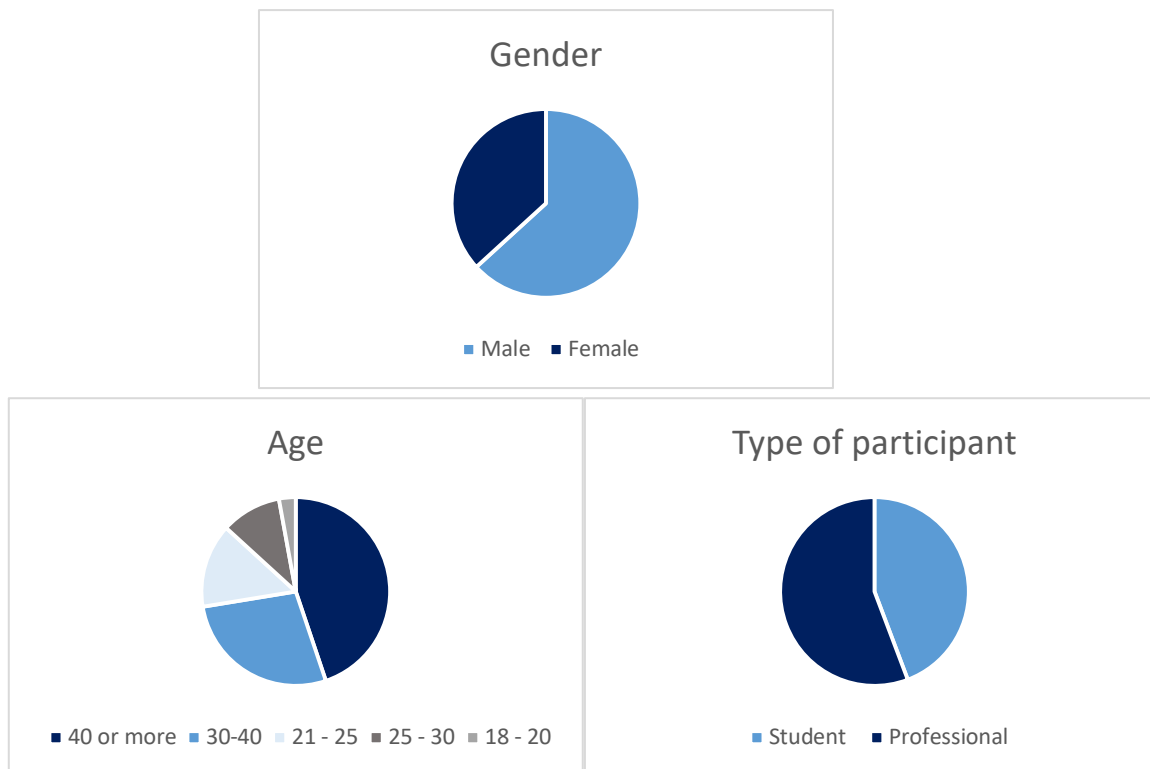
4. ANALYSIS

4.1. Alumni perspectives

The group that represented the Escola's alumni network was by far the biggest group analysed. It is composed of several types of people who attended the innovative courses of the Escola. These included students, professionals, young adults or experienced professionals, or individuals representing different types of institutions (professional, educational, governmental etc).

The actual survey respondents could be grouped into the following categories (at the time of the courses):

Figure 4: Demographic distribution of the alumni network

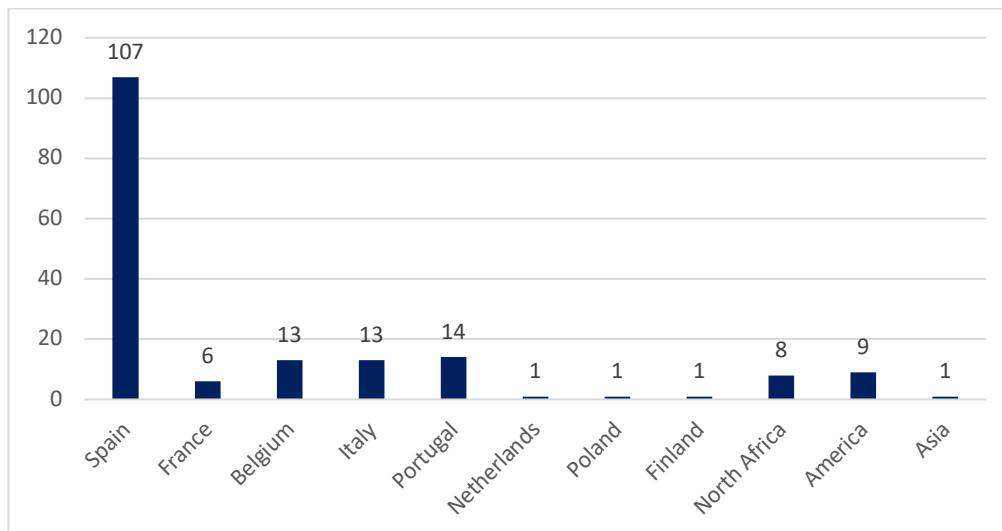


Source: [Nunes et al. \(2019\)](#)

From the graphs shown in Figure 4 it can be seen that a majority of the respondents from the alumni pool were female. The age distribution was more divided, but nearly half of the respondents were aged 40+. This corroborates the final sections of the demographic section of the survey, which demonstrates that more than half of the respondents were professionals.

As the Escola is an international institution, it welcomes students coming from all corners of the world. With this in mind, it was impossible to limit the survey respondents into pre-established geographical areas. In total, as seen in Figure 5 below, 18 nationalities were identified, with Spain being the most common nationality with 107 respondents. This would be in line with the general proportion of the Escola's alumni network, which holds a Spanish majority.

Figure 5: Geographical areas of Escola's alumni network

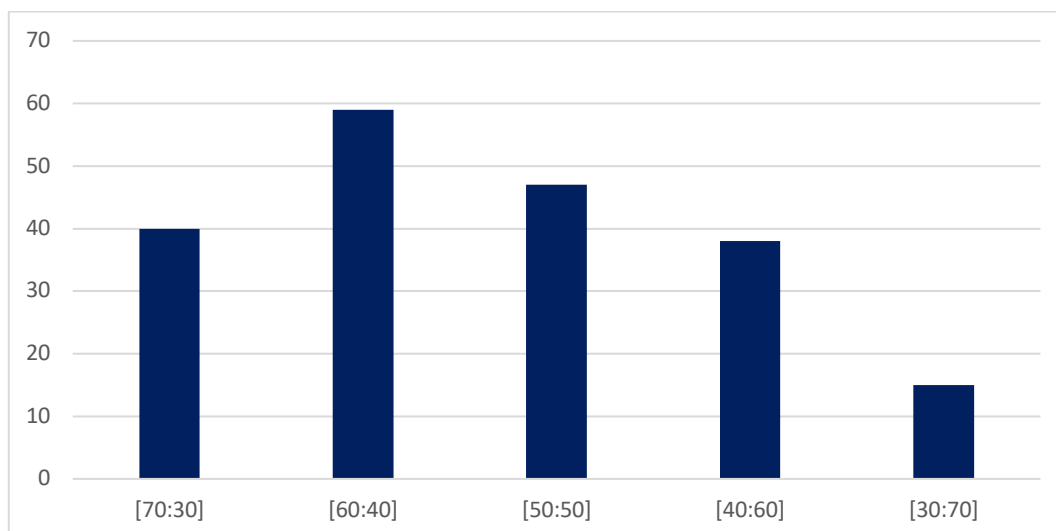


Source: Nunes et al. (2019)

The first goal of the survey was to establish whether the students felt that, through the format of the courses, the main objective of the Escola was fulfilled – meaning that they gained a thorough and complete overview of intermodal transport (or its specialisation). On a scale of 1 to 5 where one was ‘not really’ and five was ‘completely’, the survey replies skewed to the positive side, with no results being reported below the 3rd (or neutral) position. 59% of the survey responses ranked the knowledge transfer of intermodality at ‘4’, 34% at ‘5’ and the remaining 7% held a more neutral position.

Another question that the respondents were faced with concerned the practical vs theoretical division of course contents and their general experiences. The responses can be seen below in Figure 6, and though the replies are scattered throughout the 5 options, the majority rated the proportion at 60:40, as seen in the graph below.

Figure 6: Theoretical : practical proportion of course contents



Source: Nunes et al. (2019)

With the goal of discovering whether the experiential learning approach was beneficial and preferred by the alumni, a question was posed on the methodologies employed in the courses. 98% of the survey respondents agreed that ‘hands-on’ courses helped them absorb the knowledge and learn faster. Similarly, 85% of the respondents indicated that the creation of heterogenic work groups proved to be a beneficial approach and promoted knowledge-sharing amongst the participants. The limited respondents who rated these questions negatively (1% replied ‘no’; 12% ‘maybe’; and 2% stated that the question did not apply to them) were small enough to be disregarded.

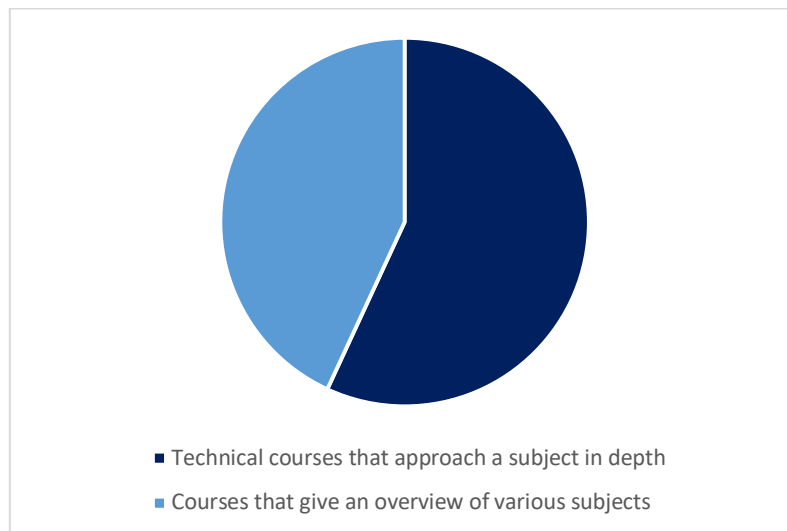
A separate section of the survey aimed to try to define the alumni’s understanding of ‘innovative courses.’ The questionnaire put forth 4 definitions:

- Courses with field visits;
- Courses with practical cases studies to solve;
- Exchange programmes and;
- All of the above.

This question was left open, and the respondents could select up to three choices, to give them some flexibility in choosing the combinations that they thought best suited the term. The predominant preference (60%) was the choice combining all of the options. The remaining responses centred around the combinations of ‘courses with practical + cases studies to solve’ with 12% of replies, ‘courses with field visits’ with 9% of replies, and ‘courses with field visits + courses with practical cases studies to solve’ with 7%.

To help evaluate the value of the course contents offered by the Escola, another question was posed enquiring what the preference of the survey respondents was: to attend courses that delve into a subject in great depth, or to take advantage of a more general course that gives tasters of various subjects. Both types are courses currently offered by the Escola, and knowing what the alumni preferred for the innovative approaches could help establish the optimal course methodology and subject matter. The alumni, however, proved largely divisive on the issue, as seen in the following graph in Figure 7. Though there was a majority of support declared for technical courses that approach a subject in great depth, nearly half of the respondents identified courses that give an overview of various subjects in a field as a preference. This leaves some of flexibility for the design of future training programmes:

Figure 7: Alumni preference methodology and subject matter

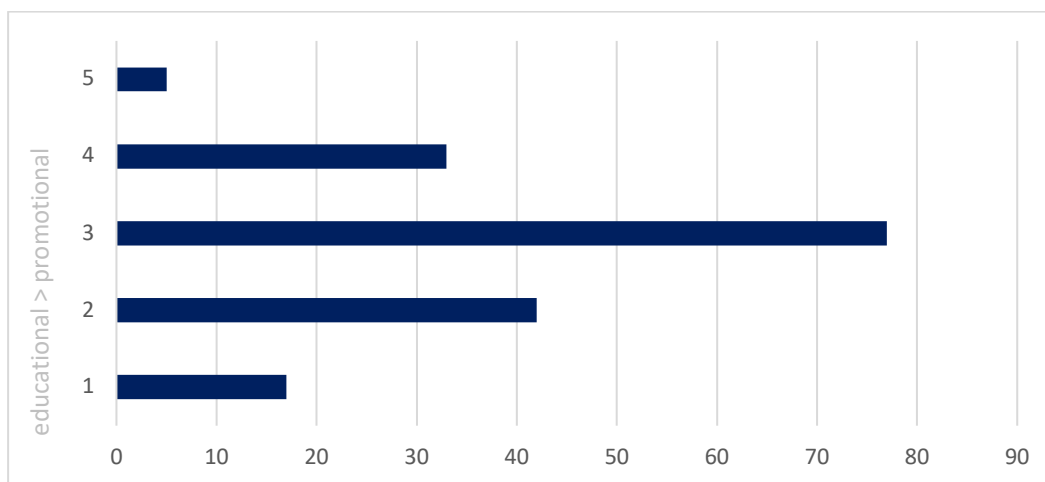


Source: Nunes et al. (2019)

To try to improve the authenticity of the practical course workshops, the Escola invites professional representatives to act as lecturers in their specialized fields. This helps the course participants understand the subject matter better as it presents real-life scenarios and environments as opposed to explaining theoretical situations solely in a classroom. The added benefit for the professional representatives, apart from share their knowledge, is to help gain some promotional credit amongst a new generation of future (or current) professionals.

The survey invited the respondents to rate the course contents in terms of the educational and promotional values, in order to try to ascertain how much the alumni actually value this professional input. On a scale of 1 (predominantly educational) to 5 (predominantly promotional), the large portion of responses rested in the middle of the spectrum, as seen in Figure 8:

Figure 8: Rate of the course contents in terms of the educational and promotional values



Source: Nunes et al. (2019)

This suggests that the alumni do not think the professional interventions in the courses are highly promotional, with 77 responses registered for a good balance between the two. Their

impression was that the commercial contents hold educational merit, helping certify the experiential learning experience.

The final section of the survey tried to establish what kind of added benefit the alumni felt they received from the courses. The Escola's innovative learning method hopes to promote networking between the students and professionals. The groups attended the courses come from different universities or companies, and sometimes from different countries. All of the students are encouraged to share their contacts with some of the other members of the courses with whom they have bonded during the training. Question 8 of the questionnaire verified that more than half (54%) of the respondents did indeed contact their fellow course participants after the course(s) were finalised. Moreover, when asked whether the alumni felt that the course experience and the course certificate brought advantages to them in job searches, $\frac{3}{4}$ affirmed that they thought the experience was indeed advantageous.

4.2. Educational perspectives

The Escola Europeia is still a young training centre, established in 2006, and it counts with delegations of students coming from new schools, universities and training institutes every year. Some of those have been loyal to the Escola's courses since its founding, whilst others have begun sending groups of students after being enticed by the uniquely practical approaches entwined in the courses. The respondents of the educational institutions comprised representatives from all sides of this wide spectrum, and the responses that they gave helped get a clearer picture of their experiences (frequent or sporadic) with the Escola's innovative courses. In total, the respondents of the survey for educational institutions came from 15 centres from four different countries (Spain, Peru, France, and Belgium). Nine of them have been collaborating with the Escola for less than five years and the remaining six for more than eight years.

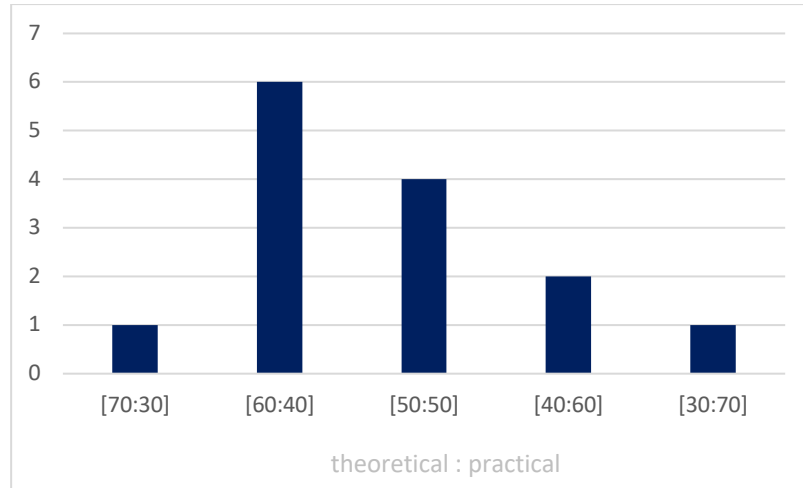
To start off the survey inquired about the general level of satisfaction on the collaboration between the Escola and the respective institutions. Eleven of the respondents have marked that they were very satisfied with the mutual collaboration with the Escola, 4 were marked as satisfactory and only 1 marked the collaboration as occasional. This is indicative that the communication between the Escola and the institute representatives is frequent enough to warrant their satisfaction and thus ensure continued collaboration.

The main goal of this survey was to analyse the level of approval with the educational offer of the Escola and whether it was appropriate to the needs of the centres. Finding out what types of groups are sent to the courses is also fundamental to ensure that the creation of the innovative courses meets the different teaching needs of the educational institutions. In general, the responses were positive with regard to the satisfaction according to the educational needs: more than 50% of the respondents replied that they 'completely' met their needs. It was also agreed that 'hands-on' courses help students learn quicker, and that the heterogeneous work groups combining professionals and students formed the most interesting part of the training. A staggering 80% of the respondents showed a greater interest in combining such mixed groups of students and professionals with regard to the heterogeneity of work groups.

Furthermore, the survey asked the representatives of the educational institutions to rate the practicality of the experience – by rating on a scale the ratio between the theoretical and practical weight of the courses. The results, reproduced in Figure 9, showed that, from the point of view of the training centres, the Escola's courses had a major theoretical component compared to the practical one, with a 60% weight given to the lecture aspects and 40% to the

practical workshops. This supports the responses given by the alumni respondents, who showed a similar preference to the 60:40 ratio.

Figure 9: Courses proportion of theory vs. practice from the point of view of the educational institutions

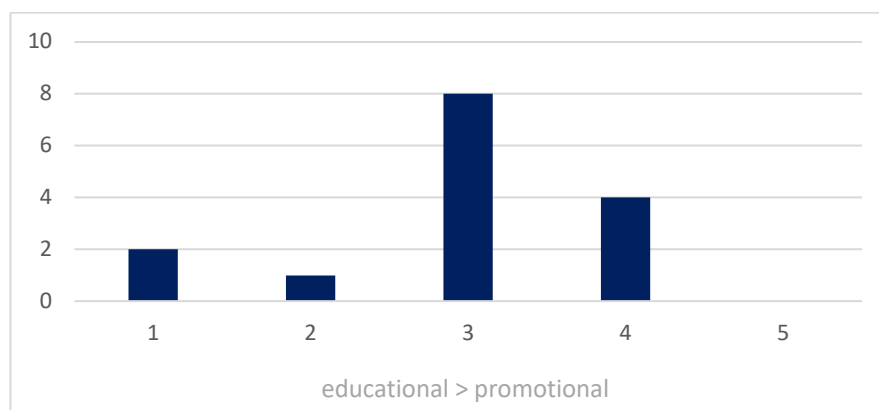


Source: Nunes et al. (2019)

Though not overly practical, the institutions did not think that the courses were overly theoretical, with 10 of the respondents choosing a ratio of 60:40 and 50:50. This demonstrates that the respondents recognised the practical additions of the courses, and suggests that participating in such an innovative course helped impact the students' perspectives and understanding by putting what they learned into practice.

From the perspectives of the teachers participating in the courses, as the respondents coming from the educational institutions frequently attended the courses as accompanying teachers, it was important to understand whether they felt the practical and professional segments of the training were overshadowed by promotional motivations of the commercial speakers. On a scale of 1 to 5 in which one is more educational and five more promotional, the answers were varied but with 8 centred at the mid-point. The responses to this question are represented in Figure 10. This can be interpreted as a healthy balance between the two types of content.

Figure 10: Perspective of accompanying teachers participating in the courses about the balance of educational and promotional contents



Source: Nunes et al. (2019)

As with the majority of surveys, some room was left at the end for comments and general feedback by the respondents. Though anonymous, the replies were positive and supportive of the practical methodology of the courses. For example, one anonymous respondent stated: *“The speakers explained to the students in a very didactic way their professional experience and their knowledge of the port activity”*. Another respondent remarked: *“It is preferable, according to my opinion, to combine educational methodologies with profiles of professors who are immersed in the professional world because they explain better the practical content treated”*. This demonstrates that the representatives from the educational institutions (in the countries with which the Escola collaborates) value the opportunity to introduce their students to the practical realities of the transport sector.

4.3. Commercial perspectives

The Escola's target audience generally encompasses students of transport and international commerce or professionals already active in the field. To them, one of the greatest appeals of the Escola's courses is the participation of the lecturers who are experienced members of the industry. They help promote the desired dynamic of the courses. The survey sent out to the partner organisations aimed to define the general satisfaction with the current courses on offer, and the relationship with the Escola and their respective organisations.

To ensure seamless coordination of projects and that the course contents are up-to-date and respond to the needs of the market, it is imperative to maintain communication between the Escola and the different partners. For a realistic and relevant experiential learning approach, the input of companies that are active and that work in the different spheres of logistics on a daily basis is pivotal. This helps ensure the appropriate and effective design and structure of the course – workshops.

From the survey respondents of the 22 partner companies who have been working with the Escola for at least one year, the majority responded that the collaborative nature of the relationship with the institutions was positive (nearly 50% gave a maximum score of satisfaction of 10 in the survey question).

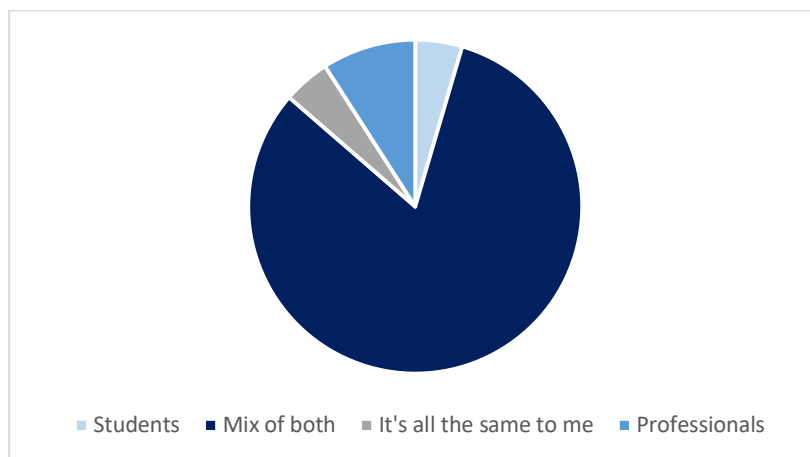
One of the goals of the survey was to analyse the mutual communication and the applicability of shared new ideas for the courses. Generally, on a scale from 'bad' to 'very good', 64% of the companies reported that the frequency of communication with the Escola was 'good'. A high level of satisfaction was also recorded in the question that aimed to ascertain the acceptance of new ideas for contents and subjects of current and future courses: 50% of the companies ranked this as 'very good' in the current relationship with the Escola.

Another variable from the survey was the feasibility of the courses being in the general interest of the fields of operation of the partner companies. For the courses to be attractive to other companies in the sector (both when marketing to collaborators and students), it is essential to have them appear as interesting for the companies that currently partner in the courses. 55% of the respondents revealed that the susceptibility of the courses for employees of their company was 'good', 23% evaluated it as 'very good' and only 14% rated it as 'acceptable'. 100% of the respondents agreed that hands-on courses are responsible for faster learning.

As the Escola organises courses that tailor to different profiles, it was interesting to see whether the companies that currently collaborate with the courses prefer to receive novice students, curious to get a first glimpse into the professional environments, or whether to showcase their operations to active professionals and present them with new options for their

businesses and operations. Perhaps surprisingly 82% of the partner companies responded that what they most preferred to receive were mixed groups of students and professionals. All of the responses are reproduced in the graph in Figure 11. This was a confirmation of the premise that heterogenic groups promote faster learning. The networking that arises between individuals who are active in the professional field and individuals engaged in studying is really interesting and quite unique.

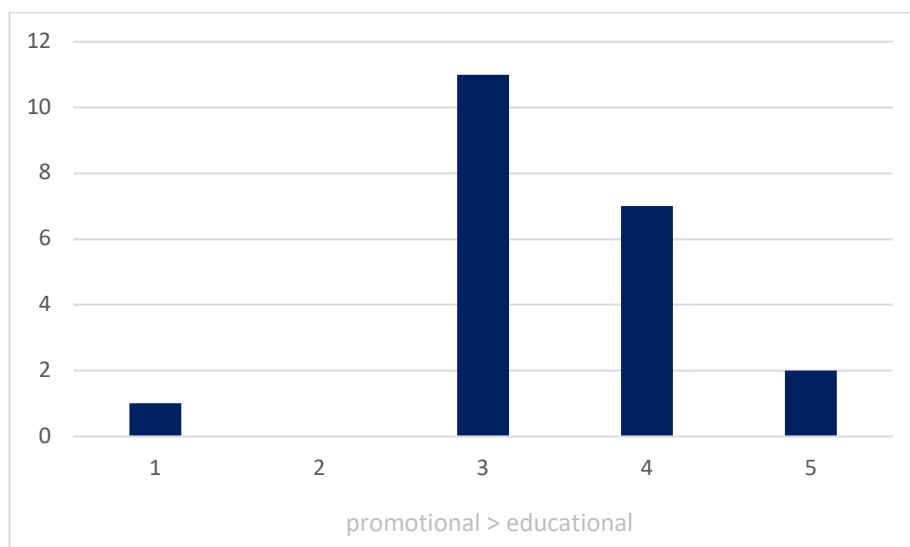
Figure 11: Preference of the collaborating companies in the profile of the participants



Source: Nunes et al. (2019)

Another parameter analysed was the importance of knowledge sharing between the parties involved. Do the companies that collaborate regularly with the Escola consider the partnership as important for the sharing of know-how? 20 of the 22 companies agreed that the collaboration was indeed central to this goal. However, when asked whether they see their participation in the courses as a promotional opportunity, or whether they viewed it more as an educational endeavour, the replies were mixed. Half of the companies saw it as an opportunity for both and half rated the courses as teaching opportunities instead of promotional advantages, as seen in Figure 12.

Figure 12: Do collaborating companies see their participation in the courses as promotional or educational

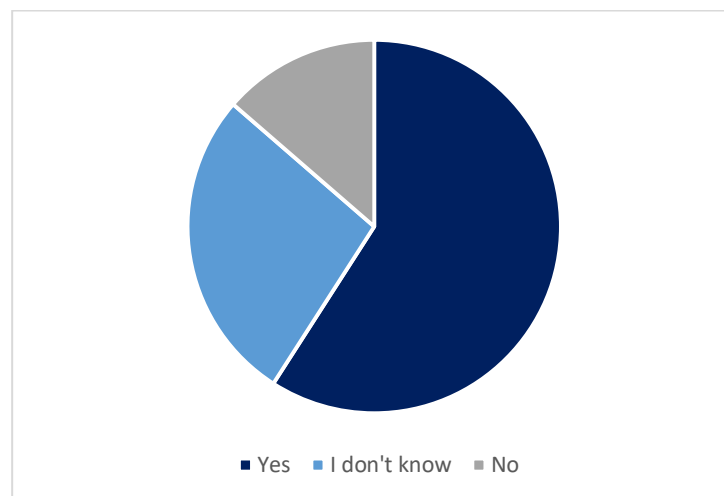


Source: Nunes et al. (2019)

Through active communication and collaboration, and by insisting that the partner companies form an active part of the courses' structures, the goal is to make them feel truly involved in the training. The surveys showed that, just like with the promotional aspects, the respondents were divided. 32% of the respondents signalled their preference to remain neutral instead of active in the course planning and preparation, whereas slightly more than half (64%) were inclined to remain more active and participative. This is demonstrative of the large spectrum of professional companies and profiles that can contribute to experiential and innovative courses by either actively designing and planning educational opportunities, or by participating on a more peripheral basis.

The general satisfaction with the course quality was then measured with the variable specifying whether the course completion diploma was advantageous for people applying for jobs in the sector. The qualification and recognition of the Escola's courses on an international scene is currently under way, but the acceptance and approval of the training by the partner organisation could serve as an indicator of the possible success in the journey to get certification recognition. From the course respondents, 59% stated that having a certificate from one of the Escola's courses was indeed advantageous in looking for future employment. However, perhaps disappointingly, nearly a third (27%) of the respondents remained in doubt and 14% did not agree with the statement at all, as seen in Figure 13.

Figure 13: Having a certificate from one of the Escola's courses is advantageous in looking for future employment



Source: Nunes et al. (2019)

Finally, the surveys hoped to establish whether it would be beneficial to have one dedicated person to collaborate with the Escola on all aspects, ranging from content creation and preparation, to course organisation and lectures. After the results of the surveys were collected, it became evident that most of the partner companies did not have a person dedicated to these activities (64% of the responses were negative). This is indicative of the need to strengthen the relationship between the Escola and the commercial organisations, and thus help ensure a more stable and consistent collaboration in the future. This would make potential trouble-shooting and course analyses easier and coherent.

5. CONCLUSIONS

In today's world, the job of a professional in the Blue Economy has undergone tremendous changes and shifts. Living supply chains, innovative technologies, digitalisation, automation, and environmental protection initiatives are only some of the changes that have befallen the industry. Moreover, ports have taken on more diversified roles, having morphed into *“facilitators of a real port ecosystem at the service of their customers involving much wider interests, a much larger port community and a much wider range of stakeholders”* (ESPO, 2019: 15). The Blue Economy comprises all of these said stakeholders, and thus the human element in this range is highly significant. In their recent memorandum to the European Union, the European Sea Ports Organisation (ESPO) has highlighted this recent shift, and with it the urgency to *“adapt the curricula of education and training programmes to the changing job reality and to develop strategies to address the transition”* (ESPO, 2019: 37).

In this paper, the authors attempted to prove that, when synergies are created in a network of training centres and companies in the sector, the result is rapid learning and the creation of innovative training programmes, ones that can adequately prepare individuals for real-life professional situations. The responses gathered from the surveys sent to a large database of the Escola's students have proven that, indeed, through positive collaboration and frequent communication, the imminently practical courses that the Escola offers open the professional world to the students and prepare them better for the challenges that may lay ahead.

For educational programmes to truly embrace the innovative approaches and thus help better prepare the students for the frequently changing professional environment, the following recommendations should be employed to truly ensure a successful experiential learning experience for the students:

1. A network of educational centres and institutes, each with a dedicated representative that would work an institution such as the Escola offering practical and innovative courses. Regular communication between them would be crucial;
2. A network of companies that are willing and actively participate in the creation and elaboration of practical courses;
3. A regular creation of heterogeneous work groups combining representatives from universities and from the professional sector, which would attend practical courses such as the Escola's and optimise the sharing of the know-how between the participants;
4. A design of course contents with a 60:40 division of theoretical:practical courses to complement each other during knowledge acquisition and retention.

The conclusions reached in this paper are indicative of the trend that is and should continue to impact the educational field in the Blue Economy. This research gathered data from a select circle of individuals – individuals that are linked to the Escola Europea – Intermodal Transport. At first glance a bias may be visible, as the survey respondents came from a select group. There is no doubt that this was a limitation, nevertheless it was deemed appropriate by the authors as currently (to the authors' knowledge) there are no other programmes that bring together so many actors on a European level to create innovative and experiential courses. In the future more research should be done, on a smaller scale, in each of the countries analysed to discover whether, on national levels, synergies and collaboration are being made between the educational and the professional sectors to help create optimal training offers. A comparison between these could then be done with this preliminary research to see whether the recommendations would be upheld.



In conclusion, it can be said that courses focusing on areas central to the Blue Economy will need to be adapted to ensure hands-on learning opportunities and thus better prepare the workforce for the challenges ahead. Heterogeneous work groups comprising individuals from various professional profiles and experience levels would also be highly advantageous to ensure optimal success. The Escola's courses can be considered a first step in the development of such methodologies, which could be made more universally available to different actors in the educational spheres. This study can be considered an initial step in the creation of a network of centres that would work towards this goal, starting in the Mediterranean and then spreading to other areas of the world in the long term.

ACKNOWLEDGMENTS

This study and the resulting paper would not have been possible without the contributions of our alumni, partners and training centres who work with the Escola on a daily basis to ensure successful organisation and realisation of the courses. To everyone who has spent five minutes replying to the questionnaires, we would like to extend our thanks and recognise their invaluable opinions. Through their time it will be possible to continuously improve the formats of the courses and work to meet the needs of the market in terms of innovative and experiential training.

We are also very grateful to the companies, terminals and professionals that collaborate with the Escola on a regular basis and make the Escola's unique and dynamic courses possible. It is only due to the availability of these professionals, who agree to host our groups in their offices and terminals, that we can add the practical visits and workshops to the course programmes. The added value of having the professionals step in as teachers helps bring the experience to life for the students, and thus ensure maximum knowledge retention. To all of those who have been with the Escola during its 13 years, we extend our sincerest thanks.

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APPENDIX 1 (QUESTIONNAIRES)

Available upon request

AUTHOR(S) BIONOTE(S)

Lidia Slawinska grew up in China and completed her higher education in the UK. She has obtained a BA(Hons) in Publishing with English from Loughborough University, and a MSc in Sociology and Demography from the Universitat Pompeu Fabra. Initially working in information management at the European Foundation Centre in Brussels, Belgium, she has since joined the Escola Europea – Intermodal Transport's team in 2011, providing support for both content creation and course promotion. Having taught e-Maritime and the Environmental Policy of the European Union on Transport at the Escola's courses in the past, she now focuses her efforts on the Escola's digital communication, online content creation, and promotional initiatives (including the #DidYouKnow series and the Odiseo newsletter).

Raquel Nunes completed her higher education in Transport and Logistics management at Escola Nautica Infante Dom Henrique in Lisbon, Portugal. She has professional experience in freight forwarding companies, shipping companies and container fleet management and control. Her current position focuses on the development of training courses for professionals and students in the maritime/logistics sector who seek to meet the needs of the market with a focus on Temperature Controlled and Supply Chains, Railway Intermodality and Groupage & Consolidation Centres.

Eduard Rodés holds a degrees in Business and Economic studies. He holds a Masters of Business form the IESE (Instituto de Estudios Superiores de la Empresa). Having held various professional positions in Information Systems at the onset of his career, he has joined the Barcelona community in 1999 as a general director of PortIC, the port community system of the Port of Barcelona. In 2001, he has joined the Port Authority of Barcelona, and worked as director of Business Development, Head of the Customer Services Department,



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director of the CCLink bulletin of the port and the person responsible for the terrestrial transport of the port. Since 2006 he has been the director of the Escola Europea de Short Sea Shipping (re-named to Escola Europea – Intermodal Transport in 2017). Academically, Eduard Rodes is a lecturer of electronic commerce and e-logistics at the University of Oviedo and the University of Barcelona alongside working as a regular teacher at the Escola's courses.