

Task 2.1 Analysis of status quo on “Learning Professional” at partner institutions

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Strengthening institutional transformations for responsible engineering education in Europe

How can technical universities help to create a workforce that **meets the challenges of complex global problems that cut across technology and society**? How can we support the **professional development of future engineers**? How can we **effectively upscale co-creation teaching practices**?

These are some of the questions we aim to address in **BoostEuroTeQ** – a scientific research project funded by EU Horizon 2020. As a complementary project of the Erasmus+ funded EuroTeQ Engineering University our goal is to encourage institutional change towards **responsible research and innovation**. **The multidisciplinary project brings together engineering education, philosophy, ethics, and science and technology studies.**

Over the course of three years (2021-2024) we will work on two main dimensions

Enabling individuals

Supporting the lifelong learning journey of European professionals by conceptualising new professional profiles

- Analyse the developmental needs of the engineers of the future
- Develop a strategy for the upskilling of professional engineers at universities
- Create tailor-made training programmes in close collaboration with institutional and industry partners
- Conceptualise training for Learning Professionals with the aim to qualify them as specialists in the scientific upskilling of engineers

Societal transformation

Augmenting the transformative potential of universities in society by investigating co-creation practices and developing context-sensitive strategies for their reflexive institutionalization

- Create a EuroTeQ Co-Creation Manifesto on institutional strategies that will enhance the evolution of responsibility practices at technical universities
- Support the development of learning networks to increase co-creation practices in each community
- Conduct stakeholder engagement events on responsibility instruments at EuroTeQ partner universities
- Investigate the benefits and challenges as well as identify potential indicators for successful co-creation teaching at universities
- Develop a roadmap for the upscaling of co-creation teaching practices

Logos at the bottom: European Union, Erasmus+, TALTECH, DTU, TU/e, CRU, TUM, EuroTeQ Engineering University.

1. EXECUTIVE SUMMARY

This report is the deliverable D2.1. from work package 2 “Define EuroTeQ Learning Professional”. It aims to report the status quo of what we refer to as Learning Professionals. The study reports the common and different features of Learning Professionals depending at which partner institution they are; including educational backgrounds, current activities and tasks.

The report relies on primary data collected from interviews with the six partners of the BoostEuroTeQ project. Inclusion of all partners let us to follow a multi-perspective approach for the status quo analysis while having an unbiased sample.

The status quo analysis helps to gain a better understanding of the determinants of being Learning Professional in alternative working environments (i.e. academia, industry, Human Resources departments). It will be the basis for developing a qualification framework for Learning Professionals to enable university members to translate and channel research expertise into tailored offers for professionals and non-academics. The report explains the current positioning of Learning Professionals in academia as well as their personal and professional characteristics. In addition, interviews with the specialists from each university make clear the similarities and differences among universities.

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2. INTRODUCTION

Boost EuroTeQ is a European project associated with EuroTeQ Engineering University, focused on the improvement of interactions between the University and the industry, external companies and, more generally, the professional world. The present task is related to deliverables embedded into work package 2 (WP2). It aims to report the status quo of what we refer to as Learning Professionals. The main objective of the second work package is to develop a qualification framework to enable university members to translate and channel research expertise into tailored offers for professionals and non-academics. The work package as a part of the project aims to develop a concept for training learning professionals who address to all economic actors. It aims to design professional development programmes and learning formats that consider the latest research findings in engineering. The study will be the first step of creating an attractive career path for Learning Professionals and strengthen engineering education thanks to them. To do so, we start analysing the current framework of “Learning Professionals” at (selected) partner universities.

From our understanding, Learning Professionals are the key actors that facilitate the knowledge transfer between the university and industry. We see “Learning Professionals” as bridge builders between professions with the overall goal to bring theory and practise together and to make knowledge from research applicable. According to the social network literature, studies show that key actors who bridges the disconnected communities are called as brokers. This is due to the fact that, if the key actor so-called broker disappears, the whole communication network and the only connections between the main actors will be broken (Burt 2004).

The literature focusing on brokers clarifies that the ones who hold this strategic position have common characteristics and advantages. They know how to talk to different audiences and how to coordinate different groups of people. They are very good at understanding who needs what (i.e. knowledge, expertise, skills and so on), who holds and how to transfer it to the person in need. They may not be specialised in a specific domain; however, they have an extensive understanding of the ecosystem. The broker’s location in the whole communication network act as a source of an increased social capital which boosts their implementation power (Burt 2007, Rodan and Galunic 2004).

In our context, Learning Professionals are expected to be positioned as brokers in the whole network involving universities and actors from the industry. Aligned with the social network literature we expect that Learning Professionals will boost innovation performance of the main actors in the wide ecosystem. By fostering new information channels and opportunities important impulses from academia reach the industry sector (vice versa) better and faster – and the translator (i.e. learning professional) enables common language which makes possible the exchanges and further enables co-creation. As they are expected to better understand the needs of industry and knowledge available in the universities, they facilitate a smoother circulation of required knowledge and talents between universities, industry and other actors if needed.

Moreover, the social network literature tells us that the strategic positioning of brokers is invaluable to be aware of recent challenges and the latest changes rapidly. This is due to the fact that they are

positioned as gatekeeper who controls the knowledge flow and in contact with all actors (Burt 2007). Therefore, Learning Professionals are expected to be aware of new technologies and the necessity of their integration in the ongoing activities earlier than other members of the ecosystem. Learning Professionals strengthen engineers' education influenced by Industry 4.0 trends. In addition, their existence facilitates engineers' adaptation to the radical changes resulting from socio-economic impacts of the global pandemic in the routines of engineers.

Although the project aims to develop a strategy which creates training tracks for Learning Professionals in academia, they may work actively in the industry. To be more specific, they may be part of Human Resources departments as well as being part of consulting firms in the training industry. To our knowledge, there is an industry that focuses on training learning and development professionals. They provide opportunities for Learning Professionals to meet and enlarge their networks with conferences, and webinars that keep them up to date. However, their positioning in academia and industry still needs to be further investigated. This is crucially important to be informed of emerged knowledge in academia (*emerged needs in industry*) and integrate it into ongoing practices (*education system*). Their passion for providing learning experiences will impact individuals (i.e. scientists as well as engineers) and organisational performance.

Thanks to the study, we aim to better understand the determinants of being Learning Professional in alternative working environments (i.e. academia, industry, Human Resources departments). The study reports the common and different features of Learning Professionals depending on where they are. Their backgrounds, current activities, tasks, in a word, status quo in academia have been studied in detail. The results of the study will be a good guideline for upcoming deliverables D2.2. and D2.3.

3. TOWARD CURRENT APPEARANCE (STATUS QUO) OF LEARNING PROFESSIONALS

Approach and Analysis

The report relies on primary data collected from six partners of the BoostEuroTeQ project. Inclusion of all partners let us to follow a multi-perspective approach for the status quo analysis while having an unbiased sample. This is due to the fact that each partner is from a different European country, and they all are leading institutions in their countries. Therefore, we can claim that our sample provides a great representation and a high-quality understanding on current activities at leading universities for *Learning Professionals*.

The Interview Instruments

The key interview questions are shown in Table 1. The first section of the interview is first, to understand if and to what extent Learning Professionals are integrated into the current activities of

the leading universities. According to their answer, we moved to the second section of the questions. On one hand, the aim of this section is to better understand the actual practices and expectations from Learning Professionals in academic structures. Respondents are also asked to identify the characteristics and typical tasks of Learning Professionals in their institutions. On the other hand, it includes alternative questions for the institutions that do not have Learning Professionals to provide a better explanation of why this kind of position is not available yet. The study aims to provide a comparison of the characteristics and the positioning at universities and firms. Therefore, in the last section, the potential added values of Learning Professionals in Human Resources departments of the firms are focused on. The required skills, the similarities, and differences of them in academia versus industry are investigated.

Table 1. Key Interview Questions

QUESTION 1 Do you at your university have such people as just described? What are they called and what are their concrete tasks in what area? How many are there?	
<i>If YES to Question 1</i>	<i>If NO to Question 1</i>
QUESTION 2 What educational background and competencies do “your” Learning Professionals bring to the table? What would you consider the key skills a Learning Professional should have to be successful in this role?	QUESTION 6 Why do you think you don’t have filled this role yet? Do you at your university see at all the need for the role of “Learning Professional” as described above? If no: why not?
QUESTION 3 Can you name a “typical” workday or “typical” project for a Learning Professional at your institution? Can you concretely describe what typical tasks are?	
QUESTION 4 Do you have a training programme or an (upcoming) alternative career track within your institution to train such Learning Professionals? <ul style="list-style-type: none"> • If yes: How does it look like? • If no: Is there something coming up – or do you only hire Learning Professionals who are already trained (and where did they then get their training from)? 	
QUESTION 5 What would you think are fields in the industry where Learning Professionals would be needed?	QUESTION 7 If you do not have Learning Professionals, who help the academic experts at your institution to develop programme concepts for practitioners (e.g. in the area of executive or continuous education)? What skill set do they have and how do they facilitate the programme development process?
QUESTION 8 How important do you think is it for HR departments to have such Learning Professionals on board?	
QUESTION 9 Do you think Learning Professionals would need a different skill set when working in the industry, in comparison to academia? What would be the same, what would be different in your opinion?	

4. ANALYSIS OF THE RESULTS

Current situation at the leading institutions

According to the first data collection and preliminary analysis, it is seen that Learning Professionals exist in the majority of our sample. Although they are not named as *learning professionals*, they are active members of executive education and lifelong learning departments.

They are mainly focused on new technologies and digitisation, engineering and science, transformation of organisations, leadership, and management areas. In general, institutions hold their learning professional centres while each faculty has its own professionals for some participants.

The number of Learning Professionals change significantly depending on the institutions. It varies in a range from 3 to 20 people. They are called as programme directors, experts, or managers. However, even if they are three directors, they work with a team who help them for development of trainings. The members of these teams are academic and pedagogical advisors. For some institutions there are external researchers/academics who does the main or complementary tasks.

Only one of the participants does not have such a role in their institution although they have some alternative solutions. They highlight the importance and necessity of having learning professionals within their institutions and currently looking for filling this role at their university. Up until now, they focused on offering courses on educational design as well as Massive Open Online Education Courses solutions. The partners did not provide any specific explanation for the reason of that they do not have such a role in their institution yet. However, they highlighted the lack of coordination or structure within the university.

An Overview of the Job Description

The main focus of directors and their departments is the development and the delivery of all trainings for professionals. They work at the intersection of executive education and internal continuing education programs, so they would design programs for our internal customers (i.e. researchers and professors) and external ones (i.e. managers and engineers).

On the one hand, they answer to calls for proposals from firms where they define their needs and look for the evolution of the job markets to better understand the expectation of the industry. They work with academics and director of trainings to be sure that academia understands what skills the firms or the job market expect from their employees. They act like *'translators'* who make sure that industry and academia understand each other and are aligned. Directors translate the needs and expectations of industry in proper set of skills, objectives, and courses. They find the proper academics and communicate with them to bring potential projects to life.

On the other hand, in some institutions Learning Professionals act like mentors for their colleagues who are academics. In this role, they focus on developing training courses on how to present and teach.

The educational background

The preliminary analysis shows that the educational background of current actors varies significantly among institutions.

On the one hand, institutions are more focused on education level of *Learning Professionals*. In some institutions, they are expected to have a completed university degree in specific fields (i.e. organisational or business psychology, learning sciences, human resources, etc.) while in other institutions they are expected to have a minimum master's degree in engineering. They all also add that having a Ph.D. is always a plus.

On the other hand, institutions expect their Learning Professionals to have past professional experience in the field of executive education as consultants, engineers, or scientists. They are the ones who help firms to build their academy and who have at least two or three years of experience in the fields of designing and delivering programmes.

Current actors are to understand the context, the standards, and expectations. Therefore, besides all the differences of educational background expectations of the learning professionals, there is a common view that they should have a good feeling of the job market. They need to understand what works and what doesn't work on both sides (i.e. university and industry). They need to be able to calibrate their language and the way of their communication depending on whom to talk to. According to our participants, the only sign of such abilities is the diversity in prior experience. In other words, they have actively worked for universities and industry at some point in their career paths. As a result, they already have developed a network involving connections to main economic actors from universities and industry.

Competencies and Key Skills

Almost all participants mentioned the necessity of being autonomous, having high conceptual abilities, project management skills, very good knowledge in the fields of learning and course development, didactics, and educational sciences. They are also expected to have a wider comprehension of digital technologies in the field of education and innovative digital tools. They need to have leadership competencies such as the ability to initiate and structure projects and programmes. In general, thanks to their leading spirit they are followed by their teams as well as they are great team workers.

On the top of all skills, Learning Professionals must be pretty good at coordination skills that includes communication, networking, and cooperation skills. They are the ones who connect sets of actors whose fields of expertise may vary significantly. Therefore, they should know how to transfer

knowledge in an engaging and an attractive way for all audiences. They should feel comfortable and be competent to communicate with different stakeholders in the process of designing and delivering programmes.

Learning Professionals have the ability to interact with anyone thanks to their broader understanding of the job market and their personal skills. They seem like good listeners and mentors rather than authority. Naturally, they know how to convince participants about the necessity of programmes and courses. They know how to speak, what to offer, how to use their strategic position to implement their ideas by pushing for getting their programmes in place.

Typical Tasks Academia

The typical tasks and routines of Learning Professionals depend on which phase of the project they are in. However, in general, we summarise their main tasks as in the below:

Learning Professionals,

- analyse the job market needs, expected skills and competencies,
- determine the needs and the best programme for customers,
- clarify the potential challenges,
- research about stakeholders and methods to be used to assess the impact on the personal and professional development, as well as the impact on one's career,
- design the curriculum which includes alternative programme modules, workshops, peer coaching sessions, the career coaching and evaluation of the programme,
- bring this concept to the market and develop business (online marketing and site visits to reach out to the target group, to get in touch with experts from the different disciplines to sell the programme),
- create strong bridges between the job market and universities.

Therefore, a typical workday of a Learning Professional would include project and team-level meetings. They meet with potential lecturers, make interviews with current participants of the programme, and reach out to the potential customers. They optimise the current activities and content of the programmes considering participants' feedback. They are involved in marketing and communication campaigns throughout the whole university to convince their stakeholders such as deans and top managers.

Career Tracks for Learning Professionals

On the one hand, the majority of our participants report that they hire Learning Professionals as they already have very attractive profiles and personal skills. These institutions do not have any training programme or career track to train employees to become Learning Professionals within their

institution. The hired Learning Professionals have a very diverse experience, and they already have strong connections with academia, counterparts, and fields.

On the other hand, two exceptional partners express that they have specialised tracks for training Learning Professionals. The first of them have an accredited training for professors. This training track includes a set of additional continuing education courses around 24 ECTS in the field of engineering pedagogy. Professors have to pass the pedagogical training in five years.

The second of them has five different career tracks. This track is for people who are trained as academics but are seeking a career alongside professorship. The pilot programme that they started is open to academics and mid-level staff. They are expected to have a few years of experience in science education and to be very passionate about teaching and learning. The programme aims to help them expand their competencies in the fields of designing and delivering programmes to target groups other than students. The focus of the pilot programme is how to guide individual learners, how to coach them, and future trends in education/training technologies. It also covers some basics of adult education and educational psychology. In the next step of this initiative a structured curriculum including different workshops, seminars, modules to train and educate Ph.D. holders to become Learning Professionals will be designed.

Working Environment of Learning Professionals

According to the analysis, Learning Professionals seemed to be important for almost all areas where there is a lack of communication among firms and researchers. Therefore, having Learning Professionals who are the bridge holders would fasten the knowledge spill over in the ecosystem regardless their main working environment.

Fields in the Industry

The collected data points to the importance of the positioning of *Learning Professionals* in the specific fields that constantly evolve. The domains radically changing these days are the ones who need their attention the most. Some of the obvious ones are renewable energy, health tech, biotech, space, climate change and sustainability. In addition, the institutions that focus on personal development, consultancy and delivering innovative teaching methods are other fields where having Learning Professionals are seemed to be game changers.

Human Resources Departments

This part explains Learning Professionals at Human Resources Departments from the perspective of the university members¹. According to some of the participants, having *Learning Professionals* on board is seen as an added value for human resources departments. Even further, some of them express that having Learning Professionals is a must for Human Resources management and for the long-term success of Learning Professionals. This is due to the fact that, Human Resources managers are crucial to support their employees in finding and in integrating the new technologies to the ongoing practices. Therefore, understanding when and how to implement new technologies is quite important for Human Resources management. They need to be agile in training employees for upcoming challenges and the latest changes for the good of their organisations.

Human Resources managers are trained in Human Resources Management, but they do not have to be knowledgeable about the fields of engineering or the new technologies. Therefore, having Learning Professionals on board provides all required complementary skills. This will lead to a more successful Human Resources management especially on finding a perfect fit for training their engineers as they will be the ones who know their employees, their skills, and missing parts. This is also important as each firm has its own culture and focus, and Human Resources managers know the needs for the firm's best.

Learning Professionals in academia versus industry

Similarities

The participants agree with the similarity of the Learning Professionals' skills regardless of their work environment (i.e. academia or industry). In both, they need to have strong communication skills, need to take the initiative to create the bridges and need to know whom to contact with. In each scenario they need to be able to do multidisciplinary teamwork, coaching and have project management skills.

Differences

On the contrary, besides the similarities Learning Professionals need to follow a different approach or attitude depending on where they are. According to the participants, the agility, speed, and the value systems, these two environments are a bit different. The job market is very dynamic and competitive in the fields of executive education compared to academia. Therefore, Learning

¹ This part does not rely on any academic research or does not include how the companies see the role of Learning Professionals on board. However, this section has been given a place as it is a good start to understand how Learning Professionals are understood and positioned by academics' views.

Professionals should be much quicker in delivering ideas for a new offering and putting the lectures together. Moreover, the industry and academia have different incentives which is expected to create a difference in the approach of Learning Professionals. Some of our participants highlighted that, in a company, the priority is making a profit while in academia, scientists are more in the pursuit of truth. In addition, designing programmes for academics such as professors or senior researchers, requires a very different approach and attitude. In academia, the programmes and the reasoning of their importance should be highly theory-based while in the private sector, the explanations and the approach are needed a more pragmatic. Participants also mention that the language Learning Professional use may be different in industry and academia. Learning Professionals in a company and in the academic world use different jargons to interact with engineers. In the academic world, there is a different expectation of professionals' integrity, they need to master the subject they talk about, even further, they need to base their speech on existing literature.

5. CONCLUSION

The goal of this first report (deliverable 2.1.) related to WP2 is for the status quo analysis of Learning Professionals in academia. The data collected to accomplish this task is analysed to have a comprehensive understanding of the current framework that qualifies Learning Professionals at selected universities. The outcome will be used to create a guideline for upcoming deliverables, D2.2 and D2.3, which aim to develop a concept for attracting and training Learning Professionals as well as collecting ideas and considering feedback to improve the developed concept and proposed training track.

The status quo analysis clarifies the current solutions at universities behalf of Learning Professionals. The report explains the current positioning of Learning Professionals in academia as well as their personal and professional characteristics. In addition, interviews with the specialists from each university make clear the similarities and differences among universities. Only two of the participants provide information about their training tracks. The fact that they are very few supports the goal of this project.

Following the interviews, a quick complementary market analysis² is necessary to provide better suggestions for upcoming deliverables. This is due to the fact that some of the participants highlighted that such training programmes already exist outside of the academia, and they already are actively working in different environments (i.e. academia and Human Resources departments). Preliminary market analysis shows that there is a specific industry, called *training industry*, in addition to mentioned two working environments. The industry function as consulting organisations providing series of seminars, conferences, and intense trainings to facilitate the integration of recent

² Some of the resources' links that may act as a guideline or starting point for upcoming deliverables added to the appendix A.

technologies and overcome challenges (such as hybrid education, home-based work) for engineers and companies. Because Learning Professionals are positioned as the only bridge holders, complementary networking activities is very crucial for the emergence of common language among co-creators and maintaining existing connections.

We also suggest taking into account all solutions available on the market to design a well-equipped programme for Learning Professionals. This will help us to develop specialised tracks for Learning Professionals who help academics and engineers. Creating one common track then adding specialised avenues (such as introduction to sector-specific tools or organising workshops for academics and Human Resources managers separately) could be an efficient design for targeting a larger audience.

6. PROJECT ISSUES, RISKS AND LIMITATIONS

First, our sample includes the leading universities all over European countries. Although having participants at the same level of quality make the comparisons possible, the results may be a representative for all European universities. This prevents us to claim the generalisability of our results.

Second, as we did not collect any data on this, we suspect that money, time, and other resources the participants invest may vary significantly. Although them being at an equal quality of education level, the lack of data prevents us to claim an endogeneity-free design. Third, the lack of “understanding” of what a Learning Professional is from the industry point of view may limit our understanding for their required skills, background and other characteristics.

Last, the structure and positioning of the Learning Professionals are different. In some of the institutions, each department has its own Learning Professionals whereas in some institutions all departments are connected to one centre where Learning Professionals are. On this regard, as a note for upcoming stages of the work packages, we can set up more focused analysis to better understand the variance among departments (such as language department versus architecture department) and among sectors (such as health versus food). This would make it easier to create an efficient training programme design for Learning Professionals and convince institutions (for each unit) to implement our offerings.

7. REFERENCES

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Rodan, S., & Galunic, C. (2004). More than network structure: How knowledge heterogeneity influences managerial performance and innovativeness. *Strategic management journal*, 25(6), 541-562.

8. APPENDIX A

Useful links/resources from the quick market analysis:

The preliminary analysis shows that there are solutions available in the market for researchers, engineers, human resources departments and consultants.

1. Buiskool, B. J., Broek, S. D., van Lakerveld, J. A., Zarifis, G. K., & Osborne, M. (2010). *Key competences for adult learning professionals* (p. 157) [Financed by European Commission] http://pascalobservatory.org/sites/default/files/keycomp_0.pdf
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