Co-funded by
the European Union

Hiram Bollaert, Katrin Dziergwa and Johanna Hautamäki

# START IT

## DEVELOPMENT OF SOFT AND FUTURE SKILLS USING DIGITAL ENTREPRENEURSHIP

Centria University of Applied Sciences
Start IT project

2024

AP UNIVERSITY OF APPLIED SCIENCES AND ARTS ANTWERP
ISPGAYA instituto superior politécnico
centria University of Applied Sciences
DUNDALK INSTITUTE OF TECHNOLOGY INSTITIÚID TEICNEOLAÍOCHTA DHÚN DEALGAN
UNIVERSITY OF LODZ
htw Hochschule für Technik und Wirtschaft Berlin University of Applied Sciences

Centria. Reports, 6.

Hiram Bollaert, Katrin Dziergwa and Johanna Hautamäki

# START IT

## DEVELOPMENT OF SOFT AND FUTURE SKILLS USING DIGITAL ENTREPRENEURSHIP

Centria University of Applied Sciences
Start IT project

2024

centria
University of Applied Sciences

**PUBLISHER:**
Centria University of Applied Sciences
Talonpojankatu 2, 67100 Kokkola

**COVER PICTURE:** Adobe Stock

Centria. Reports, 6.
ISSN 2814-8924
ISBN 978-952-7173-98-5

# CONTENTS

# STARTIT – INTRODUCTION

The StartIT project is a cooperation partnership in higher education that aims to teach soft and future skills to students through project-based learning and international cooperation partnerships. The project involves six European higher education institutions and aims to improve students' abilities to work in a multicultural environment, work in interdisciplinary teams, communicate to a diversified audience, think creatively, empathize, reflect on their competencies and develop entrepreneurship skills. The project will have three mobility events, one focused on digital entrepreneurship and the environment, another on digital entrepreneurship and the climate and the last one on digital Entrepreneurship and the green city. The project involves cooperation partnerships in higher education, with tasks assigned to each partner. The project results, among which is this publication will be made available for open access.

The creation of these resources has been (partially) funded by the ERASMUS+ grant program of the European Union under grant no. 2021-1-DE01-KA220-HED-000023215.

Neither the European Commission nor the project's national funding agency DAAD are responsible for the content or liable for any losses or damage resulting of the use of these resources.

# ACTIVE LEARNING AND ENTREPRENEURSHIP IN IT

## The partners are:

- AP University of Applied Sciences and Arts Antwerp, Antwerp, Belgium
- ISPGAYA, polytechnic institute of higher education, Porto, Portugal
- Centria University of Applied Sciences, Kokkola, Finland
- Dundalk Institute of Technology, Dundalk, Ireland
- University of Łódź, Łódź, Poland
- HTW Berlin - University of Applied Sciences, Berlin, Germany

The partners have a long-standing relation during which they have run various projects and student mobilities. They chose to prioritize active learning and entrepreneurial skill development for this project, drawing from the experiences of their previous projects. To facilitate active learning, which emphasizes hands-on, participatory learning, the project incorporates mobilities. These mobilities involve the movement of students and staff between partner institutes for a short period of time. In this student-centred approach, students will be organized into teams with diverse social, cultural and educational backgrounds. They will collaborate to address a specific problem and apply their knowledge in a tangible manner, ultimately creating a startup—a new business venture—dedicated to providing a digital solution for the identified problem.

The structure of this document is based on these focuses: entrepreneurship in IT, active learning and mobilities.

The contributing colleagues are graciously acknowledged by the partners for generously sharing their expertise and insights on these subjects. The outcomes of their research are organized into two main segments: theory and practice.

# THEORY

This segment is subdivided into two sections:

# ENTREPRENEURSHIP IN IT

The following chapters can be found in this section:



Aliasghar Khavasi (Head of the master's program in Cloud-Based Software Engineering and Principal Lecturer in IT at Centria University of Applied Sciences) discusses the SII (Strength, Improvements, Insight) method in relation to entrepreneurship in IT. This method assesses students' performance, identifies areas for improvement and offers insights on enhancing teamwork. Khavasi concludes that the StartIT program effectively develops students' entrepreneurial skills, facilitating the transformation of innovative ideas into successful companies. Through the use of the SII method, students receive comprehensive evaluations and valuable feedback, enabling individual and team improvement. Ultimately, this program has the potential to cultivate a new generation of successful entrepreneurs who can make positive contributions to society.



Michał Beczkowski (University of Łódź) shares his perspective as a student who actively participated in various mobilities organized by the consortium. He highlights the benefits of active learning, particularly through teamwork and clearly defined goals, in developing various competencies, including highly sought-after soft skills. Beczkowski concludes that active learning projects provide valuable opportunities for individuals to enhance both technical and soft skills, crucial for success in professional and academic life. The MIMI (Multinational, Intercultural, Multidisciplinary and Intensive approach) methodology, characterized by its multinational, intercultural, multidisciplinary and intensive approach, proves to be effective for both students and mentors. Acknowledging the growing demand for soft skills in the job market, educators and employers are encouraged to incorporate active learning projects into their programs.



Katharina Simbeck, Jan Vietze and Katrin Dziergwa (Professors at HTW Berlin – University of Applied Sciences) present a case study on entrepreneurship education for design students. They outline a course structure focusing on teaching entrepreneurial skills, emphasizing sustainability and financial planning. The course received positive feedback from students, with high participation levels and quality outcomes. The authors conclude that the course successfully addresses the need for design students to acquire fundamental entrepreneurial skills, particularly emphasizing sustainability and financial planning. The use of a business plan and learning log as assessment tools allows for personalized learning and peer feedback. Overall, the course effectively promotes peer learning and imparts important skills such as social skills, teamwork, team management, communication and presentation.

# THE ASSESSMENT IN STARTIT

**Aliasghar Khavasi**
Centria University of Applied Sciences (FINLAND)

## 1 INTRODUCTION

StartIT is an innovative program to foster entrepreneurship skills in students from diverse backgrounds. The program provides a unique opportunity for students to work in multi-discipline and multi-cultural teams, learning about various aspects of starting a new business. The program aims to help students develop entrepreneurial skills and turn innovative ideas into successful companies.

The assessment of the StartIT program is a crucial component that helps to evaluate the progress of the students and identify areas where they need to improve. The assessment method used in the StartIT program is the SII (Strength, Improvement, Insight) method. This method considers the strengths of each team and individual, identifies areas for improvement and provides insights into how the teams can work better together.

The assessment process starts with each team presenting their mock business models, prototypes and teamwork. The groups are evaluated based on various criteria, including the quality of their prototypes, the strength of their business models and the effectiveness of their teamwork. The teams are also assessed on their ability to work together and communicate effectively, as well as their ability to overcome challenges and find solutions.

In addition to assessing the students' technical and business skills, the StartIT program also evaluates their interpersonal and cross-cultural skills. This is especially important given the multi-disciplinary and multi-cultural composition of the teams. The ability of the teams to work effectively with people from different backgrounds and skill sets is assessed. Despite cultural and linguistic differences, they are also evaluated on their ability to communicate and collaborate effectively.

The SII method provides a comprehensive and well-rounded assessment of the performance of the students in the StartIT program. It helps the teams identify their strengths and weaknesses and provides valuable feedback on how to improve. The insights gained from the assessment process support the groups in developing their skills and refining their business models.

The assessment in the StartIT program plays a crucial role in helping the students develop their entrepreneurial skills. The SII method provides a well-rounded evaluation of the performance of the students, considering technical and interpersonal skills. The insights gained from the assessment process are used to help the students improve and succeed in their entrepreneurial endeavours.

## 2 SII MODEL AND STARTIT

StartIT is a unique program that provides students with a platform to showcase their innovative ideas and develop prototypes. The program is designed to be multi-disciplinary and multi-cultural, with participants coming from different backgrounds and countries. The program uses the SII (Strength, Improvement, Insight) model to assess the student's performance and progress. This model is used to evaluate not only the technical aspects of the project but also the business model, teamwork and cultural diversity.

# 3 INTRODUCTION TO SII MODEL

The SII model is a comprehensive assessment method considering individual and team performance. It is designed to evaluate the strengths and weaknesses of the participants and provide them with valuable insights into their performance. The model is based on three key components: Strength, Improvement and Insight.

Strength: This component focuses on identifying the strengths of the participants and their teams. It considers the participants' individual and collective achievements and evaluates their contribution to the project.

Improvement: This component focuses on identifying areas for improvement and providing constructive feedback. The participants are encouraged to learn from their mistakes and continuously improve their performance.

Insight: This component focuses on providing participants valuable insights into their performance. It helps the participants understand their strengths and weaknesses and guides how to improve their performance in the future.

# 4 INTEGRATING SII INTO STARTIT

The SII model is integrated into StartIT through various stages of the program. The program is divided into several steps: idea generation, prototype development and final presentation. At each stage, the SII model assesses the participants and their teams.

Idea Generation: During the idea generation stage, the participants are assessed based on their ability to develop and present innovative ideas effectively. The SII model is used to evaluate their strengths in idea generation, areas for improvement and insights into how they can improve their performance in the future.

Prototype Development: During the prototype development stage, the participants are assessed based on their technical skills and ability to work in a team. The SII model is used to evaluate their strengths in prototype development, areas for improvement and insights into how they can improve their performance in the future.

Final Presentation: During the final presentation stage, the participants are assessed based on their ability to present their prototypes effectively and convince a panel of experts about the viability of their ideas. The SII model is used to evaluate their strengths in presentation skills, areas for improvement and insights into how they can improve their performance in the future.

The SII model is an effective tool for evaluating the performance of the students in StartIT. It considers the multi-disciplinary and multi-cultural nature of the program and provides a comprehensive assessment of the participants' performance. By integrating the SII model into the program, the participants can receive valuable feedback that helps them improve their performance and achieve their goals.

# 5 DEPLOYING SII

The “strength” part of the SII model focuses on recognizing and celebrating the positive aspects of the project and the teams involved. This aspect is crucial for boosting the motivation and confidence of the participants and it is implemented in the following ways:

Feedback from mentors and instructors: The mentors and instructors involved in the StartIT project provide regular feedback to the teams on their strengths and areas for improvement. This feedback is crucial for the teams to understand what they are doing well and where they can focus their efforts.

Peer evaluations: Besides feedback from mentors and instructors, the teams also participate in peer evaluations. This process involves each team evaluating the other teams’ strengths and providing constructive feedback. This helps to build a positive, supportive environment where teams can learn from each other and recognize their strengths.

Recognition and rewards: The StartIT project recognizes the teams’ strengths by awarding prizes and certificates. This recognition is not only an incentive for teams to perform well but also serves to acknowledge the hard work and achievements of the participants.

By highlighting the teams’ "strengths", the StartIT project aims to create a supportive and motivating environment for the participants. The Strength part of the SII model plays a crucial role in this regard and helps to foster a culture of continuous improvement and growth.

# 6 STRENGTH

The “strength” aspect of the SII model focuses on identifying and utilizing the strengths of each team member and the team as a whole. This aspect maximizes individual and group strengths to achieve the project’s goals and objectives.

Implementation of this aspect of SII involves several steps. First, it is crucial to understand the strengths of each team member, which may include technical skills, communication abilities and problem-solving capabilities. This information can be gathered through individual assessments or team discussions.

Once the strengths of each team member have been identified, the team can assign tasks and responsibilities based on these strengths. For example, a team member who is strong in communication may be responsible for presenting mock prototypes to stakeholders. In contrast, a team member with strong technical skills may be tasked with developing the prototypes.

In addition to utilizing the strengths of individual team members, the team should also identify their collective strengths as a group. This may involve identifying the strengths of the team dynamic, such as solid communication or effective problem-solving.

It is important to note that the “strength” aspect of SII is a continuous process, with the team regularly reassessing the strengths of individual team members and the team. This helps ensure the group utilizes their strengths effectively and achieves the project’s goals.

By incorporating the “strength” aspect of SII into the StartIT project, the teams can take advantage of the strengths of each team member and the team as a whole. This helps to ensure the success of the project and the development of strong, high-performing teams.

# 7 IMPROVEMENT

The “improvement” aspect of the SII model focuses on identifying areas of the project or individual team members that could be improved to enhance their performance and contribute to the project’s success.

Implementation of this aspect of SII involves several steps. First, it is essential to establish clear project goals and objectives and communicate these to all team members. This ensures that everyone understands what is expected of them and the project’s overall direction.

Next, the students should regularly assess their progress towards these goals and identify areas where they may need to improve. This may involve identifying problems with the design of the mock prototypes, communication issues within the team, or a need for a better understanding of the business model.

With the two presentations, one in the event’s early days and one at the end, the students can showcase their progress and receive feedback from their mentors and business stakeholders. This feedback can help the students to identify areas where they need to improve.

Continuous guidance from the mentors and stakeholders, who have significant experience in the field, helps the students to understand the current market trends and make the necessary improvements to their projects.

Once areas for improvement have been identified, the students should work together to develop solutions to these issues. This may involve adjusting the business model, improving the mock prototypes, or improving team dynamics and communication.

It is important to note that the “improvement” aspect of SII is a continuous process, with the students regularly reassessing their progress and making adjustments as necessary. This helps ensure that the project remains on track and that the students continuously improve their performance.

By incorporating the “improvement” aspect of SII into the StartIT project, the students can identify areas for improvement and take proactive steps to address these issues. This helps to ensure the success of the project and the development of strong, high-performing teams.

# 8 INSIGHT

The “insight” aspect of the SII model focuses on identifying areas of the project or individual team members that are particularly strong and should be capitalized upon. This aspect of the assessment aims to build on the team and project’s strengths and ensure that these strengths are leveraged to drive success.

Implementation of the “insight” aspect of SII involves several steps. First, it is essential to identify the strengths of the team and the project. This may include recognizing the strengths of individual team members, such as their technical skills or ability to work well under pressure, or the strengths of the project itself, such as the innovative nature of the business model or the potential for scalability.

Next, the team should build on these strengths by leveraging them in the project. This may involve developing the business model further or focusing on developing the mock prototypes in areas where the team is particularly strong.

Recognizing the strengths of the teams’ collaboration and communication skills is also essential. These skills are critical to the project’s success and should be fostered and developed throughout the event. By promoting teamwork and open communication, the team can capitalize on their strengths and build a more robust project.

Incorporating the “insight” aspect of SII into the StartIT project helps the teams to understand their strengths and to build on them. This helps to ensure the success of the project and the development of high-performing teams that are well-equipped to tackle future challenges.

# FROM PARTICIPANT TO MENTOR – PERSPECTIVES OF ACTIVE LEARNING IN PRACTICE

**Michał Beczkowski**
Faculty of Physics and Applied Informatics, University of Łódź (POLAND)

## ABSTRACT

The purpose of this article is to present the benefits of using innovative learning methods, such as active learning, from the perspective of a project participant. Projects based on innovative teaching techniques serve the development of various competencies related not only to a specific scientific field. These include soft skills, which are in increasing demand in the labour market. Creative and constructive thinking, problem-solving, communication and emotional and social intelligence are among many soft skills that can be acquired while participating in projects based on teamwork and clearly stated goals, like the design of a mobile application. Learning such skills can be combined with digital skills in projects connected with IT fields.

Interviews with students and former participants of such projects examined how the acquired skills are practically used in professional and academic careers. Results show that developing soft and digital skills during studies is beneficial for future employment, not only in IT.

Keywords: Innovative didactic methods, active learning, soft skills, digital skills, multinational project, intercultural project, multidisciplinary project, problem-based learning.

## 1 INTRODUCTION

Acquiring skills during studies is wider than the knowledge gained during lectures. Various projects offer students the opportunity to develop soft skills, which will be much more helpful at work in the future than simple textbook knowledge. Projects that use active-learning methodologies focus on the development of soft skills. Among them, such methods as Team-Based Learning (TBL) can be successfully used as an instructional strategy in tertiary education (Michaelsen & Sweet, 2008). Other methods include Problem-Based Learning (Schmidt et al., 2009), Peer Instruction (Porter, Lee, & Simon, 2013) or Process Oriented Guided Inquiry Learning (Simonson, 2019). This chapter presents the Multinational, Intercultural, Multidisciplinary & Intensive (MIMI) methodology (Dowdall et al., 2021) in practice. Such methodology can successfully improve soft skills via intensive and engaging projects like game development (Podlaski et al., 2020). It presents two perspectives of Active Learning: from the student's and employee's points of view. Based on participants' experience in projects using MIMI methodology, this chapter examines benefits students can expect during studies and later in the workplace. Future job positions were considered from three perspectives: as a student, former project participant, academic teacher and IT employee.

## 2 METHODOLOGY

Most active-learning methods focus on developing soft skills such as critical thinking or creative problem-solving. Active-learning methodologies are often implemented through project-based tasks involving group work. Multinational, Intercultural, Multidisciplinary & Intensive (MIMI) methodology offers another dimension of active learning: cooperation in intercultural and multidisciplinary groups. It gives young people an opportunity to learn in practice how to work and communicate efficiently in diverse groups, which becomes a more standard work environment, especially for IT specialists and academic teachers. Nowadays, IT specialists are required not only to find solutions to problems in their field but also to describe those solutions to other non-technical teammates or clients. Soft skills such as effective communication and social and emotional intelligence help to develop the means

to effectively facilitate digital skills (Herrmann, McFarland, 2019). The same non-technical skills can be helpful for academic teachers. They also need to communicate their specialised knowledge to first-year students with various cultural and social backgrounds.

The acronym MIMI stands for core elements of the methodology. The multinational dimension allows students from different countries to cooperate on a given task. In Europe, such cooperation strengthens using English to communicate despite different native languages and cultures. Such cooperation - when successful - helps build a common European identity. Young people learn how to overcome borders and cooperate with their peers who can have the same motivations and goals as them despite living in different countries. Such a goal can be gamification in the project, as described in this paper StartIT or GGULIVRR@ Łódź (Dowdall et al., 2021). It is another powerful tool for student engagement – adding game elements to non-game context (Barata, Gama, Jorge, & Gonçalves, 2013). With a clearly stated goal, it is easier to overcome differences and try to find a solution together. At the level of multinational cooperation, all participating nations must work equally on the project (Dowdall et al., 2021).

Intercultural is another essential element of MIMI methodology. It is closely connected to the experience of cooperation with people from many cultures. This element requires a friendly atmosphere and respect for other cultures, thanks to which students learn to communicate and empathise. Teachers and mentors can encourage students to share their cultural backgrounds to enrich the project's final product. It leads to deeper intercultural understanding.

Like the first two elements, multidisciplinary dimension strengthens skills of communication. When using the MIMI methodology, project participants should represent different domains so specialists and non-specialists can develop mutual understanding. It is another dimension that is difficult to achieve during regular classes at tertiary education institutions that usually specialise in one field and do not prepare future employees for coworking with people of different educational backgrounds.

The last element is called "intensive", corresponding to the projects' short duration. This element again simulates a natural company environment where specific goals must be achieved in time. Such experience allows students to learn in practice how to work under time pressure and focus on a task.

To ensure workflow during the project, mentors need to moderate teams while giving students space to work independently to achieve given goals. The student teams need to be self-managed and self-organised, not controlled by mentors. The first step is team building through joint activities. It is also essential to clearly state the project goal and theme from the start, so students know what is expected from them. Building teams according to the given theme is the first step of the learning process - how to communicate and exchange ideas. The rest of the project teams participate in general meetings with mentors and workshops that help them improve their skills. Mentors are also available to students when they want to discuss ideas and visit each group during work to offer advice. During the project, there are also presentations of teams' ideas. Students develop presentation skills by explaining ideas to the mentors (in mentor-team meetings) and during general meetings with all participants. When working in teams, students develop skills connected with problem-solving and teamwork. Even though the MIMI methodology includes an "intensive" element, it is advised to encourage students to take the same time to socialise and go sightseeing in the host city. It can be perceived as an award for good time-planning and division of work to find a balance between working on a project and relaxing.

# 3 STARTIT PROJECT

StartIT is a project, partially funded by the ERASMUS+ grant, aimed at developing soft and digital skills among students of higher education institutions. The project is based on the organisation of three ten-day mobilities, each involving 50 students from participating educational institutions. Each team consists of diverse students, making teams multidisciplinary and multicultural. Each mobility aims to design and develop a mobile application and business plan related to a given theme that raises public awareness of global and social challenges. For StartIT project climate change was chosen as a central theme.

During the process of designing the application, students are supervised by academic teachers from participating institutions. Mentors, just like teams, represent multidisciplinary and multicultural approaches. Mentors use innovative teaching practices with the adoption of active learning methodologies.

Project goals include developing soft and digital capabilities within higher education. A secondary goal is to promote an inclusive higher education system and develop female students' participation in science-related fields.

# 4 RESULTS

The skills gained through participation in projects designed following the MIMI methodology turned out to be helpful in later professional work. Based on the author's experience and interviews with former participants, this article presents the benefits of participating in projects such as StartIT.

Participants of such projects develop two sets of competencies: soft skills and skills connected with the domain of the study, in this case, digital competencies, business assessment and management. Projects like StartIT also have a theme that raises awareness of global challenges like climate change. An additional goal is developing science, technology, engineering and mathematics (STEM) courses and participation of women in them by encouraging female students to join such projects.

Soft skills mainly focus on different dimensions of communication - within a team, presentation of ideas, intercultural dialogue, using languages other than native and communicating with supervisors (like constructive feedback). Another area of soft skills developed during the project is idea creation, including analysis, brainstorming, conflict management (if there are different ideas within a group), imagination, innovation and open-mindedness. The project also includes idea evaluation which strengthens logical reasoning and active listening. Presentation of ideas helps develop public speaking skills and self-confidence. The intensive element of the project puts on student time pressure to help them develop prioritising, planning and stress management skills.

Projects like StartIT are examples of using innovative methods during the teaching process. Such methods improve the learning process as students become deep learners instead of just listening to a lecture. Students share that they find such a project stimulating and exciting and the overall experience is much different from regular university courses.

## 4.1 STUDENT

Participation in MIMI projects allow the development of soft skills valuable during studies. Teamwork and communication are at the heart of the various projects that are the basis for passing subjects. Developing communication skills, problem-solving and creative thinking allows you to gain self-confidence. In addition to overcoming cultural barriers, participants learn to communicate with their peers and mentors, which later translates into easier cooperation with academic teachers. One of these skills is clearly presenting problems and difficulties, asking for advice and then putting this help into practice. Although these projects were related to IT, students from other fields also benefited from them. The multidisciplinary element allowed to broaden horizons and look for solutions not only in the studied field.

Some experiences have only been appreciated over time. The first contact with such a project can be a stressful experience due to the entirely different nature of work than during regular classes at the university. The pace of work was a challenge for many students - they are used to working on assignments from week to week (as classes take place) and not in one week. This required focusing on the task at hand and avoiding distractions. For introverts, another challenge was communicating in a group and overcoming the fear of spending time with others. In retrospect, however, students appreciated these initially stressful experiences and were later more resilient to potentially stressful situations such as studying under time pressure before exams.

An essential element of projects based on the MIMI methodology is the multinational dimension, which involves trips abroad to one of the partner universities. For many students, this may be the first such experience. Studying

abroad for a semester or full academic year can seem complicated, especially if it involves attending an institution in a new cultural context. Such projects, which take a shorter period, can make future trips abroad much easier and more desirable. It shows new opportunities for multinational cooperation. In the presented case that took place in the European Union, students developed interest in Erasmus exchanges that they had not considered before participation in the project.

Students find active learning more engaging, which results in learning more than when taught with traditional learning methods. This engagement also motivates to look for opportunities to gain more profound knowledge when the project is finished. Engaging way of presenting courses in STEM also has a positive impact on the rising number of female students interested in IT. It is also connected with developing self-confidence in fields usually dominated by another gender.

Innovative and engaging way of tackling various global and social problems allows students to develop an interest in them. It also shows students how they can get involved in action for change - for example, by designing apps that can reach out to their peers to raise public awareness of issues.

When applying for such a project, students were guided primarily by the opportunity to acquire new skills that will be useful in the future. However, participation in the project was an experience that impacted students' personal development. Being in a successful team reinforced students' self-image and self-esteem. Such experience was helpful in managing self-learning how important it is to control emotions and stress to achieve success. Many soft skills became useful in everyday life, like managing and relating to others (experience in building teams) or planning and prioritising (focusing on project results).

## 4.2 FROM PARTICIPANT TO ACADEMIC TEACHER

Participation in projects using the MIMI methodology during studies turned out to be a valuable experience for people who later chose a university career. Participation in such projects allows them to experience the benefits of active learning. They learnt in practice how important the techniques of student engagement, goal setting and rewarding are, which can be used when designing their own courses, regardless of the field of study. With such experience, academic teachers are more likely to incorporate innovative teaching methods instead of relying solely on traditional methods. Although not all elements of MIMI can be included in regular university courses, teachers reach for similar didactic methods because they have experienced the benefits of innovative teaching methods. These methods include Cooperative Problem-Based Learning or Challenge-Based Learning.

The experience of participating in projects like StartIT also leads to appreciating the advantages of working in groups, which develops additional skills beneficial for students. Many students appreciate the opportunity to work in a group and even prefer this form to individual work, especially if the task is a serious challenge. Teachers often do not realise this, focusing on traditional forms of teaching. Participation in such projects, however, changes the point of view, allowing teachers to stimulate the development of students better.

A former project participant, understanding the students' needs and expectations based on their experience, can successfully participate in similar projects as a mentor. Mentoring is a crucial component of such a project, but it is also a skill an excellent academic teacher should have. The experience of working with a mentor as a student translates into the fact that, as a teacher, it is easier to empathise with the role of a student who needs help. Such experience also teaches communication, advising in a way that is accessible to the student and giving tips without imposing their solution, which the student should ultimately be able to do on his own to develop problem-solving skills. Cooperating with different mentors also allows students to see how different competencies, distinct methods and varied opinions mentors have. This allows learning how to seek further advice and solutions by cooperating with various mentors. In an academic career, such skill is valuable when collaborating with different researchers - and with the experience of doing projects in a multinational, intercultural and multidisciplinary environment, it helps to collaborate with specialists from different fields and countries to enrich academic research.

As a participant in such projects, a person can experience various problems unrelated to technology or a lack of digital skills. Sometimes the problem is the organisation of working time, the division of duties in a group or communication. Experiencing such challenges during group work can help a future academic teacher anticipate

difficulties while conducting a project with the participation of students. This gives a better understanding of students and can be used to better assist by helping them solve a wide range of problems - including those related to soft skills.

As mentioned earlier, the multinational dimension allows you to experience participating in projects abroad. This experience benefits people with an academic career, which in today's global world is not limited to taking part in various projects only at their home university.

The intercultural dimension is becoming more and more critical in the work of an academic teacher. Erasmus programs and student mobility mean that there are more and more people from abroad among students. The experience of cooperation in an intercultural environment builds the ability to seek mutual understanding despite cultural differences and appreciate the values that intercultural cooperation offers.

The above benefits are enjoyed by teachers, regardless of their specialisation. For IT teachers, the experience of participating as a student or a mentor as a specialist also has many benefits. One of them is combining complex tasks based on digital skills with an exciting challenge. Tasks given to students can relate to real problems and situations, due to which students learn how to use their IT skills in real-life situations. Linking knowledge with practice through active learning is a very effective method.

## 4.3 FROM PARTICIPANT TO IT SPECIALIST

Projects such as StartIT focus primarily on developing skills useful in IT-related work. This applies not only to digital competencies but also to the soft skills discussed in this article. With the advancement of computers and robots, humans' complex competencies are increasingly valued in many occupations. Among them are soft skills like critical and creative thinking, communication, social responsibility and empathy (Herrmann & McFarland, 2019). Learning how to process information, come to conclusions, share ideas and explain them are valued skills in the IT environment. Pairing soft and digital skills can lead to a successful career – nowadays an ideal employee is not only formally qualified but also (or even more importantly) emotionally and socially intelligent, creative and digitally capable (Ahmed, Capretz, & Campbell, 2012).

Participating in projects that rely on innovative didactic methodologies gives future IT sector employees many advantages – but is not limited to this field. If those projects are connected with developing digital skills, it creates a double beneficial combination. MIMI adds another dimension – multinational, intercultural and multidisciplinary – corresponding to IT sector trends. Many companies are international and deal with various fields. This experience prepares students to work in diverse teams and efficiently communicate despite cultural or specialisation differences. The "Intensive" element is essential as it corresponds well with a real-life working environment.

Another vital benefit is developing problem-solving and creative thinking skills as a collaboration process with teammates. In many IT companies, cooperation is a crucial part of a workflow. The end product usually results from collaborative, not individual, work. With various soft skills, this process is much easier.

Former students also appreciate the form of such projects, which reflects well their later experience in IT work: meetings with mentors/supervisors to discuss solutions and gradual evaluation to fix errors during the development process. Incorporating realistic teamwork during studies prepares participants better for future work challenges (Walker & Slotterbeck, 2002). An important skill is also efficient communication with non-technical co-workers.

# 5 CONCLUSIONS

Interviews with students and former participants of projects based on the MIMI methodology and the personal experience of mentors showed many benefits of active learning. The acquired skills are used in practice, in professional and academic life. Students participating in such projects are more active, self-confident and easier to get along with teachers. They see an increase in soft skills and appreciate the benefits of having such skills.

Students are more willing to engage in similar projects and look for opportunities to develop skills outside of regular courses at the university. Regardless of the specialisation, students appreciate digital skills and cooperation between IT specialists and representatives of other disciplines. Due to the practical use of acquired skills, students become more involved in the learning process, seeing its tangible results.

Participation in such projects also provides many benefits in later professional life. Whether it concerns an academic career or a job in IT, soft skills combined with digital skills and the experience of cooperation in an intercultural and interdisciplinary environment provide an advantage in the labour market.

The experience of both being a participant and a mentor positively affects the work of an academic teacher. Such a person becomes more open to the use of innovative teaching methods. Developing digital and soft-skilled workforce requires teachers who possess such skills. This affects the development of curricula that meet the needs of the modern labour market, allowing students to gain lifelong skills (Beckingham, 2018). It corresponds with the global trend of increasing deliberate soft skills training at higher education institutions to prepare graduates for professional careers fully.

# REFERENCES


Ahmed, F., Capretz, L. F., & Campbell, P. (2012). Evaluating the demand for soft skills in software development. IT Professional, 14(1), 44–49.

Barata, G., Gama, S., Jorge, J., & Gonçalves, D. (2013). Improving participation and learning with gamification. In Proceedings of the First International Conference on Gameful Design, Research and Applications – Gamification '13. ACM Press.

Beckingham, S. (2018). Baseline skills – scaffolding soft skills development within the curriculum. In Higher Education Computer Science (pp. 221–242). Springer International Publishing.

Dowdall, S., Hłobaż, A., Milczarski, P., O'Reilly, D., Podlaski, K., & Stawska, Z. (2021). Multinational, Intercultural, Multidisciplinary & Intensive (MIMI) Methodology to Enrich Soft Skills Development in Computer Science Students. Informatics in Education, 20(3), 391-420. https://doi.org/10.15388/infedu.2021.16

Herrmann, A., & McFarland, C. (2019). Future workers: computer science, apprenticeships and soft skills: lessons in education and training from the United States. The United States Studies Centre. Retrieved from https://www.ussc.edu.au/analysis/future-workers-computer-science-apprenticeships-and-soft-skills

Michaelsen, L., & Sweet, M. (2008). The essential elements of team-based learning. New Directions for Teaching and Learning, 116, 7-27. https://doi.org/10.1002/tl.330

Podlaski, K., Milczarski, P., Hłobaż, A., Monteiro, J. C., O'Reilly, D., Hautamaki, J., Bollaert, H., Possemiers, P., & Neves, N. (2020). A Methodology for soft-skills improvement via game development intensive project. In EDULEARN20 Proceedings (pp. 5467-5474). IATED. https://doi.org/10.21125/edulearn.2020.1433

Porter, L., Lee, C. B., & Simon, B. (2013). Halving fail rates using peer instruction. In Proceeding of the 44th ACM technical symposium on Computer science education – SIGCSE '13 (pp. 273-278). ACM Press.

Schmidt, H. G., Molen, H. T. V. D., Winkel, W. W. R. T., & Wijnen, W. H. F. W. (2009). Constructivist, problem based learning does work: A meta-analysis of curricular comparisons involving a single medical school. Educational Psychologist, 44(4), 227–249.

Simonson, S. R. (Ed.). (2019). POGIL: An Introduction to Process Oriented Guided Inquiry Learning for Those Who Wish to Empower Learners. Stylus Publishing.

Walker, E. L., & Slotterbeck, O. A. (2002). Incorporating realistic teamwork into a small college software engineering curriculum. Journal of Computing Sciences in Colleges, 17(6), 115–123.

# CASE STUDY: ENTREPRENEURSHIP EDUCATION FOR DESIGN STUDENTS

**Katharina Simbeck, Katrin Dziergwa, Vietze Jan**
HTW Berlin – University of Applied Sciences (GERMANY)

## ABSTRACT

The curriculum of the Bachelor of Arts in Industrial Design at HTW Berlin comprises, among numerous design related courses, one business administration course. The course is supposed to teach basic and introductory business administration skills and has historically been taught in a classic lecture style with a written examination at the end. Following the StartIT project, the course has been taught using elements of the StartIT program.

**Keywords:** Entrepreneurship education, higher education

## 1 INTRODUCTION

Hochschule für Technik und Wirtschaft Berlin (HTW Berlin) is the biggest university of applied sciences in Berlin, with about 14.000 students. It is state funded, which means that there is only a very small fee. Students come from a broad range of backgrounds. Many students start their studies directly after finishing high school, but many have worked for several years before or are changing careers. Circa 40% of Berlin school pupils have migration background (Senatsverwaltung für Bildung, Jugend und Familie [SenBJF], 2022), the same is expected to be true for HTW Berlin. 25 % of students at HTW Berlin are international students.

The Industrial Design program at HTW Berlin was established in 2011 by Professor Katrin Hinz. It is now led by three professors for Industrial Design, who offer a diverse range of seminars and courses in collaboration with over 30 lecturers, guest professors, 3 artistic/scientific staff and 2 studio employees. The program currently has about 160 Bachelor students enrolled in Industrial Design. In addition, there is a 3-semester Master's program in System Design that follows the Bachelor's program.

The fundamental concept of the study program was to create an entirely new approach to industrial design education. The strategic focus is on Universal Design, Sustainability and Technology. Industrial Design at HTW demonstrates that Universal Design Thinking puts people at the centre of development while incorporating technological advancements and emphasizing sustainability without sacrificing design quality.

Industrial design today requires a combination of design quality, knowledge and empathy. Additionally, the work of industrial designers is closely linked to the industrial research and development process for products and services.

As a result, the program strives to provide students with practical learning experiences, including collaborative project work with other technical fields at the university and industry partners. This enables them to tackle particularly complex design projects. For instance, on campus, the program collaborates with Automotive and Mechanical Engineering, Civil Engineering and Microsystems Technology and conducts joint projects with companies working on vehicles, packaging, solar technology and electronic products.

Industrial Design is a bridge between the department of "design and culture" and the technical and economic fields of application. The program is at home in all these areas and it is believed that only their combination can capture the complexity of real economic life. When industrial design is utilized as a strategic instrument, as a driver for innovation advantage, an important economic factor and a critical problem solver, well-educated experts in this field are essential, whether in a production company, a service business, or a public authority. Many new ideas and innovations will need to be generated in the future and the program is proud to be part of the process. The

program has a history of producing successful graduates, as demonstrated by the large number of awards and design prizes.

In addition, the program works towards improving students' intercultural competencies. This enables students to identify and implement designs that match the affordances of different markets and cultural realities. To this end, the design program has established exchange programs with several well-known international universities. Each year, 10-15 international students join the group, while a similar number of students gain experience abroad.

The program also aims to enhance the language competence of its students locally. At least one or two of the main projects are facilitated in English by guest professors or the program's own faculty.

This chapter is structured as follows: In the second section we will discuss how business administration is traditionally taught in higher education in non-business programs. In the third section we will introduce a concept how entrepreneurship education can be integrated into a business administration course for design students. Afterwards we will present the learnings and results from the first run of the new course design. Finally, we will discuss how the results of the case study can be transferred to other settings.

# 2 INTERDISCIPLINARY COURSES IN BUSINESS ADMINISTRATION

Introductory courses to business administration are an integral part of many non-business programs in higher education, including in engineering and design. A fundamental understanding about how companies work is deemed a relevant competency for those students aiming to pursue a career in the creative industry. Students will need to have a basic understanding about profit & loss statements, balance sheets, budgeting processes, marketing and sales strategies. Traditionally those courses are structured along the function of business administration: Organization, Strategy, Finance, Human Resources, Production, Logistics, Marketing and Sales.

# 3 ENTREPRENEURSHIP EDUCATION FOR DESIGN STUDENTS

In this section we will discuss why entrepreneurship education is relevant for design students and which learning goals are pursued in the course "Introduction to Business Administration" for B.A. students in industrial design at HTW Berlin, as well as the assessment strategy

## 3.1 MOTIVATION AND LEARNING GOALS

In comparison to other disciplines, graduates of design programs at HTW Berlin quite often pursue an entrepreneurial career path: while only 3 % of bachelor graduates in business administration become self-employed, the contrary is the case for the design faculty. Here, 15-23% work as freelance designers, many more works in small design offices with up to ten employees. It is therefore essential for the future design graduates to acquire not only a general understanding about how companies work, but also to learn basic entrepreneurial skills.

## 3.2 COMPETENCIES AND ASSESSMENT

The re-designed course aimed at teaching two complementary competency areas – a general understanding about business administration and the economy and basic entrepreneurship skills. In line with those two areas of competencies two types of assessments were chosen. On the one hand, students were required to hand in a learning log answering 16 general questions related to business administration (50% of grade). Additionally, students were required to work in groups to write and present a business plan for a self-chosen entrepreneurial idea (50% of grade).

While writing the business plan, students were expected to work in groups, come up with a joint business idea and present it in the form of both a written business plan document and an oral pitch presentation.

In the learning log (individual task, no group work), students are expected to answer a set of questions to demonstrate, that they have gained a broad understanding of the field of business administration. Students could choose their own priorities by answering some questions in more detail and others on a more general level. In comparison to a traditional written examination, a learning log gives students the opportunity to work at their own pace. A learning log prioritizes general understanding as opposed to learning concepts by heart. Students were also expected to use references to indicate the source of their material. The written task thus contributes to preparing for writing the bachelor thesis. All questions could have been answered based on the content of the lectures, but any introductory text book to business administration would also serve the purpose.

The questions were:

- Who owns companies and who decides about the management?
- What can be learned from published financial statements about a company? Use a real example!
- How is the price for a product or a service determined?
- How are companies managed?
- What are important strategic decisions in companies?
- How can success in companies be measured?
- What does a company's profit depend on?
- How to sell more?
- What are major differences between consumer marketing and B2B marketing?
- What is different with regards to services?
- How to decide if a big investment should be made?
- When should a product/service be bought, when made? What does this decision depend on?
- Which risks exist in logistics?
- Current topic: What have I learned about the influence of higher energy prices?
- Current topic: What have I learned about sustainable management?
- Last question: What have I learned about leading people?

In preparation for their approaching bachelor thesis, students were encouraged to use and reference various sources, such as textbooks, databases (bundesanzeiger.de), newspapers. The required citation style (APA) was explained during class. The learning logs are evaluated using a peer review approach on the Moodle Learning management platform. Student are asked to evaluate each other kindly but fairly. Through the peer review, students get the opportunity to compare themselves to their peers and close potential gaps in knowledge or understanding.

## 3.3 DETAILED COURSE PLAN

The course consists of two parts: a weekly lecture (2 hours) and a bi-weekly tutorial (2 hours). For organizational reasons the course could not take place in some weeks. In order to make up for those, the course always took place as a 4-hour course in the remaining weeks. A detailed course plan can be found in table 1.

The lecture part of the course started with an introduction into the purpose of companies and the major difference between turnover/sales and profit. Profit & loss statements as well as balance sheets were discussed. The platform bundesanzeiger.de was used to access financial statements of public companies. In order to understand the connection between profit & loss and the balance sheet the concept of depreciations was introduced, as well economies of scale. As the legal and organizational structure are important in particular to freelance work and founding new companies the class discussed relevant details both for small and large organizations.

In order to introduce the concepts of prices, pricing and inflation, the lecturer brought a package of cookies from the supermarket. The graph for supply and demand within the class was sketched on the whiteboard. The class discussed, how much the same cookies would cost in different settings (at a discounter, at a pit stop, in a restaurant, served with coffee), depending on the quality (organic, vegan), or the situation (last minute present for mother).

Students researched which cost are associated with the production of cookies (ingredients, depreciation for oven, packaging, marketing) and how the cookie maker might be organized. Further financial concepts introduced in class were marginal costing and break-even calculation.

The section about marketing and sales started with the introduction of Porter's 5 forces model and important key performance indicators with regards to sales, customers, the market and competitors. Another focus area of the course was logistics, production and procurement. This concluded with a small Christmas simulation inspired by the famous Beer Game (Wikipedia contributors, 2021) but transferred into a Christmas setting in which father Christmas is supplied presents by Himmelspforte (heaven's door, village in Brandenburg where children send wish lists), that is supplied by the Christ kind, who gets supplied by the Nuremberg Christmas market.

The introduction of the concept of time value of money/capital budgeting was motivated by a fictional dispute between uncle Willi and aunt Erna. Both offer to give students 100 Euro, but Erna pays now and Willi only in one year. Later fictional Willi increases his offer to 100 Euro plus interest. The time value of money is thus introduced and sample tasks with compound interest are calculated together. On several occasions, current topics from the business section of newspapers were discussed. This includes one article about the integrated clothing business Shein and the production network that allows it to keep prices exceptionally low and an article about current challenges in the automotive industry.

**Table 1. Course Plan: Business Administration for Industrial Design.**

| Week | Lecture | Tutorial |
|---|---|---|
| 1 | Introduction, Purpose of companies, Profit&Loss statement, Balance sheet | Introduction, Group building |
| 2 | Economies of Scale, depreciation, Management, organization | Ideation, Business Model Canvas |
| 3 | Cost accounting: full costing, price calculation | Business Plan (BP) elements<br>Lean Startup concept |
| 4 | Cost accounting: marginal costing, break even calculation | BP: market analysis, product |
| 5 | Cost accounting: make or buy | BP: marketing and sales |
| 6 | Supply chain, Logistics | B2B Marketing, Online Marketing |
| 7 | Christmas special: Logistics game (beer game) | BP: Financials – revenue |
| 8 | Procurement, Capital Budgeting | BP: Financials – cost |
| 9 | Corporate finance | BP: Financials, Executive summary |
| 10 | Leadership, Key Performance Indicators, planning and budgeting | BP: pitch deck |
| 11 | Presentations of business plans (pitch presentations | Hand-in: learning log |
| 12 | Online: peer assessment of learning logs | |
| 13 | Close-out and feedback | |

The lab series starts with group building and ideation based on the business model canvas. The lean start-up concept and some of its major tools (minimum viable product, A/B tests, continuous deployment, scaling, pivots) are introduced. Students are then asked to develop their group's business idea in a business plan over several weeks, covering product, market, customers, price and major financials. Every week, groups had the opportunity to gather feedback from the teacher. In order to inspire the pitch deck presentation, two examples from the show "The shark tank" were watched. Finally, groups present their pitch in front of their peers and have to answer some tough questions by the teacher.

# 4 LEARNINGS AND RESULTS

At the beginning of the term, 26 students signed up for the course, but only 21 (81%) completed all tasks. All student who completed the tasks passed the course. Students participated very actively in the course. The results submitted were generally of high quality.

Not all groups used the opportunity to get weekly feedback on the advancement of their business plan. Those who did work continuously, had higher quality results at the end. All groups came up with a thought-through, detailed financial plan, based on the provided template. Many groups emphasized the importance of sustainability goals, next to financial goals. Some groups tended to overemphasize sustainability (i.e. the creation of a fair working environment, the need for sustainable packaging), while under delivering on the business aspects of their business idea. The quality of the pitch presentations was very high on average. However, not all students used the opportunity to prove their competency and skills. One student read some prepared sentences from her mobile phone, being unable to summarize the business idea in her own words. One male student on two occasions corrected his female team mates before proceeding to his own part, giving the opportunity to discuss potentially gender biased behaviors in class.

Even though the task for the learning log was clear from the beginning of the semester, some students postponed working on it to the end of the term, which resulted in some missing hand-ins. Most of the learning logs submitted were of high quality and documented a deep reflection process of students. The most interesting contributions were written to the questions starting with “What did you learn about…”. For future deliveries of the course, more questions in the assignments should encourage self-reflection as opposed to summarizing textbook content. Many students had issues applying the required citation style, they often used footnotes instead of APA. This indicates, that a deeper discussion of the existing citation styles is necessary.

The total workload was deemed quite high by students, for future repetitions of the course the learning log task could be reduced. It is useful though to have individual tasks next to group tasks to enable a better assessment and grading for each individual student.

# 5 CONCLUSIONS

Given the career paths of many design students entrepreneurial skills are an important addition to the creative and technical skills taught in an undergraduate design program. Structuring the course around a business idea increased involvement by students and thus a more thorough understanding of the concepts covered in this class. A business plan in particular invites to investigate the interdependence of the various business disciplines. The interactive approach also fosters peer learning and teaches future skills such as social skills, team work and team management, communication and presentation skills. Changing the assessment format to multiple deliverables and without a final exam requires students to continuously engage with their peers and the class content leading to high quality results. Yet both the learning log and the business plan allow students a choice to set a focus within the covered content.

# REFERENCES

Senatsverwaltung für Bildung, Jugend und Familie (SenBJF). (2022). Blickpunkt Schule Berlicht 2021/2022, Berlin.

Wikipedia contributors. (2021, November 29). Beer distribution game. In Wikipedia. https://en.wikipedia.org/wiki/Beer_distribution_game#cite_note-SCA-1

# ACTIVE LEARNING

**The following chapters can be found in this section:**

for measuring these skills, individual and group feedback reports and recommendations for integrating the KYSS-instrument and online learning environment into existing workplace learning guidance programs. The document concludes by highlighting ongoing research on the effectiveness of the KYSS-model and the associated learning environment in supporting awareness, reflection and behavioral change in soft skills. Based on their research, it can be inferred that the KYSS-model and its accompanying tools offer a comprehensive approach to identifying, measuring and developing soft skills necessary for success in the 21st-century labor market. The recommendations provided for integrating these tools into existing guidance programs can assist organizations in effectively addressing the skills gap and supporting the development of employees' soft skills. Ongoing research will further contribute to understanding the effectiveness of these tools in promoting awareness, reflection and behavioral change related to soft skills.

# MORE THAN AN AFTERTHOUGHT: PROJECT-BASED CLIL WORK AS A TOOL FOR ACTIVE LANGUAGE LEARNING IN CONTENT-BASED PROGRAMMES

**Joanna Britton, Stephen Hargreaves, Eva Faes**
AP University of Applied Sciences and Arts Antwerp (BELGIUM)

International youth mobility programmes such as Erasmus+ have enormous potential for learning, growth and exchange on many levels. More particularly, in terms of soft skills and employability, the international and multilingual environments that arise during such projects are fertile ground for participants to acquire language and communication skills (Traineeships abroad for students). Whether in the context of the growth of higher education English as the Medium of Instruction (EMI) programmes, or in other projects and exchanges where the choice of language(s) is more or less consciously negotiated, there is huge potential for participants to develop their plurilingual competence and metalinguistic awareness through contact both with people from the host country and also with fellow participants and programme leaders from other countries.

Indeed, language aims are officially embedded in many exchange programmes. The programme guide for Erasmus+ grant applicants, for example, cites the European Commission's maxim that "the opportunity to learn two other languages in addition to one's mother tongue should be offered to everyone," (European Commission, 2023, p. 4) and affirms that that "The promotion of language learning and linguistic diversity is one of the specific objectives of Erasmus+" (European Commission, 2023, p. 11-12). Moreover, language skills are not just a learning aim but also a question of inclusion. As the guidelines explain, for some participants, "being exposed to foreign languages and cultural differences" during activities may "put off individuals and somehow limit the benefits from their participation" (European Commission, 2023, p. 8), thereby implicitly suggesting that organisers should take action to facilitate access for potential participants who lack confidence or skill when it comes to language. In terms of the implementation of multilingualism, there is explicit encouragement of pedagogical innovation within exchange programmes, through "teaching and assessment methods, development of pedagogical material, research, computer assisted language learning and entrepreneurial ventures using foreign languages" (European Commission, 2023, p. 12). However, in practical terms the Erasmus+ guide focuses mainly on language-specific support, such as opportunities to take language tests or possible funding for extra language courses or e-learning.

The guide also does not offer guidelines on the process of developing a project's language policy, the choice of language to be used for workshops or contact within a project beyond the fact that the application and programmes must be completed in official EU languages. Nor is there specific good practice for integrating language support within content-based exchange programmes. Moreover, with a few exceptions (The guide notes one objective of virtual exchanges could be "the practice of foreign languages and teamwork, notably to enhance employability" (European Commission, 2023, p. 205); Under 'Key Action 2: Cooperation among organisations and institutions', there is mention of the potential for "increased motivation for language learning through innovative teaching methods or better links to practical use of language skills required by the labour market" (European Commission, 2023, p. 214). Finally, most notably, in reference to primary and secondary school education, there is reference to "projects that can help create language aware schools and that build on the increasing linguistic diversity in schools, for example by encouraging early language learning and awareness and developing bilingual teaching options (especially in border regions and areas where inhabitants use more than one language)." (European Commission, 2023, p. 219), language acquisition is generally presented in the guide as a separate skill, rather than language(s) and content being systematically integrated in a vision whereby language is a tool to acquire and refine in order to work on other tasks or skills. This is not necessarily surprising. Given the presence of 24 official languages in the European Union (alongside many other community languages and dialects), multilingualism is perhaps so implicitly omnipresent in exchange programmes that a de facto language immersion experience is expected to emerge without a need for specific attention to the means whereby this happens. More particularly, although returning students generally report that language skills are one of the biggest areas in which they notice improvement after participating in exchange programmes, in practice, by 'language' they often mean English-as-a-lingua-franca, typically used amongst speakers of other languages (For a recent exploration of

the impact of English-as-a-lingua-franca study abroad programmes, see e.g.: Köylü, 2023). There are, therefore, multiple opportunities here for growth in the path towards more language-aware policy and practice. In particular, drawing on the wide literature on bilingual and multilingual education, there is the potential to integrate tools that actively enhance participants' language acquisition during content-focused activities. Moreover, it is also useful for organisers to consider how and where activities can be organised in multiple languages during a project, instead of reverting to one language (typically, English).

In this article, we will focus on the first of these opportunities by sharing some practical ideas for how organisers and trainers can enhance students' language learning and experience of international programmes. This proposal is based on our work in the teacher-training department of AP Hogeschool in Antwerp, Belgium. More specifically, we extrapolate from our current research project "CLIL-fluential" in order to suggest how CLIL (or Content and Language Integrated Learning) pedagogy can inspire an enhanced approach to interaction in sessions or workshops, whether in short- or long-term exchange programmes. This approach is particularly relevant for content-based programmes that do not currently have language proficiency as an explicit aim, but which are held in a language that is not the students' first (or second…) language.

To do so, we will first give a brief outline of CLIL, then explain our own research aims and methodology and the specific context which inspired our research and finally, share five concrete suggestions extrapolated from our research.

## WHY CLIL?

CLIL – and related approaches such as immersion, bilingual education, content-based instruction – emerged in the 1990s and was historically most associated with primary- and secondary-level education (There is nonetheless interesting recent work on its application in (higher) education – see : CLIL: Content and Language Integrated Learning). CLIL stands for Content and Language Integrated Learning and refers to a teaching approach in which the integrated learning of (cross-curricular) content (e.g. biology, economics, ethics, maths, history, physical education, …) occurs in a language of instruction other than the native tongue (e.g. English, French, German, …). This results in the simultaneous learning of content and a foreign language, e.g. in our study, Flemish students learning biology in English.

Two core features of CLIL include an emphasis on the '4 C's' (content, communication, cognition and culture), along with the inclusion of dual goals, whereby each lesson or series of lessons focuses on explicit content and language aims. The approach has steadily gained in popularity over the years with many resources available for implementing CLIL in school education (See, for example, for Flanders: Martens & Van de Craen, 2020). In particular – and relevant for the present context – many CLIL resources are designed to support the implementation of CLIL within a whole curriculum. This may either be for one or more subjects, or streams within a school, or even in an entire school, as in the case of international or bilingual schools. Whether due to the policy at the school, regional, or national levels, or simply out of habit, CLIL is not generally seen as the go-to approach for structuring short-term or one-off teaching moments in multilingual contexts, although there is nothing inherent in the methodology which requires it to be used for the same pupil, in the same subject, throughout the whole school year or even their whole school career.

Indeed, while there are ample resources for integrating a full 'CLIL package' in a school or curriculum, based on our current research into a project-based CLIL approach, we believe the approach has great potential for project-based work as well. Previous research has shown that CLIL can help students improve their knowledge of both language and content in an efficient way (Van de Craen, 2012), making it potentially useful in contexts where there is limited contact or classroom time such as short-term projects or exchange programmes. Research has also suggested that due to the fact it is primarily a content-driven methodology rather than a language-teaching methodology, CLIL has benefits over related approaches also found in tertiary contexts such as Content-Based Instruction, English for Specific Purposes and English Medium Instruction (Alssen, 2017). The relevance for CLIL in tertiary contexts is reinforced by research with participants on international exchanges who displayed a rather matter-of-fact attitude to the role of English during such programmes, whereby "English is conceptualised not as a goal but as a means through which participants seek to understand one another and engage with difference" (Helm & Acconcia, 2019).

The efficiency of the CLIL approach to enhancing language through content is thus likely to intersect with the pragmatic goals of such participants.

Moreover, since students on exchange programmes generally encounter different languages at once (i.e., the language of instruction, plus the national or school language, plus any additional family or community languages), the extra awareness of language(s) through CLIL could enable them to sharpen their insight into the structures of language more generally. These skills can apply not only to the language of instruction but also promote progress in other languages used or learned during a programme – for example, English, Dutch, or French in a Belgian CLIL scenario (Strobbe & Sercu, 2013). The chance to develop language skills alongside metalinguistic awareness is thus also highly relevant given that mobility and employability are core aims of international exchange programmes. Further, the task-based approach within CLIL, with an emphasis on teaching materials with clear and practical context and plenty of time for interaction, have been shown to have a positive effect on the students' learning autonomy, including individuals who did not explicitly choose to enrol in a CLIL-stream (Ohlberger & Wegner, 2019). The focus on topics and resources with direct relevance to real life is thus also another clear bridge between international exchange programmes and CLIL, while the potential benefits for participant autonomy are also promising in terms of employability and soft skills that are highly valued outcomes of mobility and international experience.

## NEW APPROACHES INSPIRED BY THE FLEMISH CONTEXT

Given that our research was conducted within the very specific linguistic context of Flanders (CLIL in Flanders) – the Dutch-speaking part of Belgium – and within a secondary school teacher-training programme, it is perhaps useful to outline how and why these parameters led us to develop a focus on project-based CLIL.

Belgium is a famously multilingual country, with three national languages alongside dozens of other languages used in the superdiverse cities. Multilingualism is also highly relevant to education in Belgium, however, development often happens in quite an organic way: multilingualism is not (yet) truly embedded in curricula in Flanders and is rarely reflected in the language of instruction. This is largely due to historical and political reasons which have impacted the legal framework surrounding language and education in Flanders. In Belgium, education is a devolved and regional competence and the policy for all levels of state instruction in the Dutch-speaking region does not leave much room for flexibility. Language policy in Flemish schools is highly regulated by law, with limited legal tolerance for languages other than Dutch as medium of instruction. Indeed, language use in education is a frequently debated topic in the region and there have been numerous recent incidents on the issue that have gained significant media attention nationally, including assertions that parents should receive less child support if their primary-age children score lower on standardised Dutch tests (Alles over de Vlaamse toetsen). Moreover, the proportion of non-Dutch language education at primary, secondary and tertiary levels is also closely regulated and there is a quota for the number of foreign-language programmes that can be approved in state-funded higher education.

Nonetheless, a number of secondary schools in Flanders do offer CLIL-programmes, mostly in English, alongside increasing integration of 'TOL', or 'taalontwikkelend lesgeven' (teaching to develop language skills) the Dutch-language equivalent of CLIL which is used to support pupils who are speakers of other languages. However, looking at the list of CLIL schools in Flanders (ArcGIS CLIL), we see that in practice, these are often schools that are outside the bigger cities, with a focus on more academic streams of education and generally with a less diverse and less multilingual population. One reason why some schools in Flanders might be discouraged from developing CLIL programmes is that here, as with the policy for language in education in general, implementation implies a number of practical limitations and requirements:

- Schools are obliged to offer an equivalent, parallel stream in Dutch for students who do not want to follow a CLIL class.
- CLIL lessons can only be given in French, English or German.
- CLIL can take up a maximum of 20% of teaching time.
- Pupils' language lessons (i.e., regular English, French or German classes) do not count towards this 20%, however ideological or religious courses, internships and the CLIL classes within the complementary curriculum do count.

These rules pose a significant restriction and in practice it is not possible for every school to implement a full CLIL stream in accordance with the above regulations. Multilingualism is thus naturally present in Flemish society and schools, but it currently finds limited mandated expression in school environments due to the regulations. This situation led us to question if there are other ways that pupils can have the chance to learn, discuss and explore topics in languages other than Dutch, without implementing a full CLIL-stream. In particular, we wanted to explore: how can schools use the CLIL pedagogy without completing the administrative process to become an officially approved CLIL-schools? And, is it possible to implement CLIL in a meaningful way on a smaller scale so that pupils with no prior experience of CLIL can still derive maximum benefit in terms of language, content and metacognition? These were the questions behind our CLIL-fluential project, which we will outline in the following section before explaining how this work can also inspire short-term multilingual projects at higher education level.

## CLIL-FLUENTIAL: DEVELOPING A PROJECT-BASED APPROACH TO CLIL

During the 2021-22 academic year, we conducted a research pilot based in the teacher training department at AP Applied University in Antwerp, Belgium. The research was conducted in a superdiverse secondary school in Flanders which has pupils of almost 50 different nationalities and languages. Through our research we wanted to explore the potential impact of a small-scale CLIL-project in a diverse, multilingual school, in a context where CLIL has hitherto been largely absent. We worked with a school that already had a good deal of experience in project-based work, such that teachers and pupils often focus on topics that are closely connected to everyday life. This made it the ideal setting to develop a project-based CLIL approach.

For this project we collaborated with students from our secondary teacher-training department, all of whom study English combined with a content subject. As part of their final year bachelor research papers, these students gave lessons to pupils from the secondary school who thus each received lessons of economics and of biology in English. Within the group of twenty-six pupils, only three were monolingual Dutch-speakers; the rest of the group was all multilingual, with a total of 21 languages spoken at home. None of the pupils had ever received CLIL lessons previously.

During the pilot we collected both qualitative and quantitative data. We conducted structured interviews with the teachers, teacher-trainees and school principal; the lessons given by the trainee teachers were filmed and analysed; finally, at the end of the project, pupils were asked to fill in feedback questionnaires. The latter focused on the question of whether a short CLIL-intervention has an impact on the pupils' (self-reported) motivation for language and content, including for multilingual pupils. A summary of results from the questionnaires showed that:

1. Overall, the majority of pupils found the CLIL-lessons "nicer" or "more enjoyable" either than subject classes given in Dutch, or their regular English lessons;
2. Moreover, 70% of the pupils reported that the lessons were "extremely useful" with a possible positive impact on their motivation and self-belief / self-efficacy;
3. Over 67% of pupils were "very glad" to have lessons in English suggesting that instruction in a foreign language could therefore have a positive impact on pupils' motivation;
4. More than 80% pupils reported enjoying the chance to listen to a teacher who was speaking English suggesting that teaching a class in a foreign language is does not therefore pose a barrier to pupils' actively following the lesson;
5. 63% of pupils said that they felt they could be active or take initiative during the lesson.

The implications here of course go further than participants merely finding lessons "nice". CLIL has long been regarded as an approach that is best suited to cognitively stronger pupils, or pupils who already have a good command of the first school language (here, Dutch). But the results of our pilot suggest that project-based CLIL work can have potential benefits for all groups including multilingual pupils and those with diverse socio-economic backgrounds. Moreover, in relation to the question of higher education and international exchanges, the pilot shows potential benefits even if we only implement CLIL on a limited basis, in a short-term project or programme.

One of the trainee teachers in the pilot reflected on the project as follows: "We make it interactive and playful and that has an impact on the intrinsic motivation of pupils, as well as their feeling of autonomy and their sense

of connection and competence" during the lesson. This feeling of belonging in the classroom, regardless of the language of instruction, is a further argument for implementing a project-based CLIL approach in international exchanges. Here, in relation to diversity and inclusion, CLIL thus also provides tools to reduce the real or perceived barriers to participation due to participants' attitudes to foreign languages by creating a language-aware environment which offers support for those who have less confidence or lower proficiency.

## GET STARTED WITH CLIL: NO CONTACT MOMENT IS TOO SHORT!

Obviously, our pilot project was limited in time and scope and for this reason we are currently expanding the project to collect data from three schools and eight classes. Nonetheless, based on the first results we are quite convinced that small-scale implementation of a project-based approach can have a positive impact on students' motivation as well as their knowledge of language and content on a specific, well-defined topic. In particular, by applying some key tools, we suggest that it is possible to distil many benefits of CLIL even in the context of short-term programmes or one-off projects or workshops.

Below are our five key recommendations based on our research for organisers who want to integrate CLIL methodology into an international exchange or workshop on a project-basis.

- Dual goals: The cornerstone of any CLIL project should be dual goals, if possible formulated by a language and content teacher working together. The content aims could be the existing aims of a session or workshop as defined by the content teacher or they may need to be adapted. As for the language aims, these could relate to acquiring a core linguistic structure or set of topic vocabulary on the topic, for example, or it could be the ability to apply certain vocabulary or structure in a specific context. Moreover, language goals are not limited to vocabulary or grammar but can also include productive and communication skills. In one of our pilot lessons, for example, one language aim was for students to be able to distil the content they had covered in the class into a set of tweets in English, with the specific aim of using the target terminology and the 'tweet' genre. The best dual goals will thus include application of content and help students bridge the gap between everyday communication, academic language and professional language use.

- Activate prior knowledge (on content and language) at the start of your session to set the scene for an active / interactive work environment. This can be done by listening carefully to pupils' input and setting clear standards.

- Be active and interactive: In a CLIL lesson, the vast majority of class time should focus on active work forms as these are the best for stimulating language use. Here you can include group work, dialogues, roleplays and other cooperative interaction patterns that are focused on the lesson content and designed at an age- and level-appropriate manner.

- Language does not teach itself: Think carefully about the amount of target language and have a clear set of target vocabulary or structures. Pre-teach key words or phrases and provide language support throughout your session in the form of images, online support, wordlists, model sentences or phrases, etc. When explaining new terminology, use the 'show-explain-expand' structure: First, show an example text or resource which makes the meaning of the term clear; next, explain the word and its meaning or definition; finally, expand the discussion to other related words or terminology that might be useful and get students to use it actively. Even in a higher education setting, giving extra language support does not make an activity 'too easy'. For participants who are using a second or third language, there is an extra challenge regardless of their age or language level and extra support will thus facilitate inclusion as well as enhancing the efficient acquisition of content goals, thus allowing participants to focus on meaningful exchange. Always bear in mind that for completely new words or terminology there is a limit to how much any human can learn in a short space of time. It is generally better to select a small set of challenging terminology and explore this in a deep and active way rather than handing out long lists or word clouds and asking students to learn them.

- Quality over quantity: When interviewed, the teachers in our research reported that it is extremely important to consider which topics are best suited to a CLIL approach. Remember that you are not necessarily going to implement CLIL tools in every workshop and contact moment in your project in the first instance. Instead, identify existing sessions in your programme that focus on real-life, relevant topics and integrate CLIL tools here first, as these will be the topics that are most likely to generate language production and discussion from students. You may also wish to consider teaching different topics in different languages, even within the same programme. For example, perhaps participants can benefit from expanding their knowledge of technical terminology from your field that is typically used in English and then practise public dissemination of the same themes using a local language or their first language. Consider too what is relevant or logical in relation to employability skills in your students' target field.

## CONCLUSION: CLIL PEDAGOGY AND MAKING THE LEAP TO POLICY

Simply put, CLIL teaching includes many of the elements of good teaching practice in any context: an active, activating, approach offering appropriate support and scaffolding to enable maximum involvement from all participants. Moreover, if you are working in an environment that is multilingual, or where trainers and participants are using languages other than their first languages, these tools can only serve to enhance the exploration of content and exchange that is already present. This does not however mean that it is essential to implement CLIL in every instance. Within CLIL pedagogy there are numerous tools, so if you want to develop a fully enhanced programme you can easily explore the panoply of CLIL tools in the future. As a starting point, why not start by selecting a few tools and see which have the most benefit in your context for students' communication skills and acquisition of content. Especially if this is the first time you are considering the how of language use within your programme, it may be too ambitious or simply unrealistic to hope to improve students' general language competence in multiple languages at once. Instead, adopt a "functional" attitude to multilingualism, whereby language and plurilingualism are not ends in themselves, but rather tools to serve the needs of content and communication in different contexts and functions.

Finally, when engaging with CLIL and language-aware programming, we also urge organisers to make the leap to policy. Language affects us all and the choices we make about language use in social or educational settings should not remain the sole proviso of policy advisors or language teachers. To take your work one step further, therefore, consider the policy implications of your project on the institutional or even national or European levels. In our context, for example, this means that we advocate to encourage integration of projects that embrace multilingualism and CLIL outside the existing legal framework and we also advocate for the future inclusion of languages other than English, Dutch, French and German. Depending on your current context, policy work could be an internal process, for example raising awareness and advocating for language-aware spaces in your programme or partner institutions. One example of recent good practice here was a recent project, 'Multilingualism, the language of Civis', which included a series of seminar workshops organised for students within the CIVIS consortium of 11 European universities (Multilingualism, the language of CIVIS). During the project, students from different academic and national backgrounds came together to explore the diversity and trends of language and multilingualism while also collecting data on language use in their respective universities.

Such examples can perhaps inspire other exchange programmes to loop back to the Erasmus+ priorities of "democratic life, common values and civic engagement" (European Commission, 2023, p 10) when considering pedagogy and language policy within their programming. For example, this can be a chance to analyse language use and habits within their multilingual environments; to delve into power balance or imbalance related to participants' level of proficiency; or to thematise global citizenship and decolonized approaches to language use in your field. In this way, with inspiration from CLIL, international exchanges can offer participants the chance not only to further their own language and content skills in an integrated way but in doing so also contribute to knowledge and policy about language within a programme.

**AUTHORS**

Joanna Britton researches multilingualism and CLIL at the Royal Conservatoire of Antwerp and in the teacher training department of AP Hogeschool.

Eva Faes is a Dutch and multilingualism lecturer at the primary education teacher training department of AP Hogeschool.

Stephen Hargreaves lectures & researches English, didactics, research and design thinking at the secondary education teacher training department of AP Hogeschool. https://anet.be/acadbib/irart/p038124@ap.be/N.

# REFERENCES

Alles over de Vlaamse toetsen. (n.d.). Retrieved from https://www.vlaanderen.be/onderwijs-en-vorming/vlaamse-toetsen/vlaamse-toetsen-wat-waarom-wie-wanneer-en-hoe

Alssen, E. (2017). Erasmus student perceptions of CLIL at a Finnish University. In Coonen, C., Favaro, L., & Menegale, M. (Eds.), A Journey through the content and language integrated learning landscape (pp. 45-54). Newcastle: Cambridge Scholars Publishing.

ArcGIS CLIL. (n.d.). Retrieved from https://www.arcgis.com/home/webmap/viewer.html?webmap=92326653147f4ed599afb2a40265760d

Britton, J., Faes, E., & Hargreaves, S. (2022). More than an afterthought: Project-based CLIL work as a tool for active language learning in content-based programs: An expansion of an earlier opinion piece that was published in Fons, the Flemish magazine for teachers of Dutch: "CLIL in een meertalige samenleving – Tijd voor een nieuw verhaal". Tijdschrift Fons, Winter 2022, special edition on multilingualism.

CLIL in Flanders. (n.d.). Retrieved from https://onderwijs.vlaanderen.be/nl/directies-administraties-en-besturen/onderwijsinhoud-en-leerlingenbegeleiding/secundair-onderwijs/clil-onderwijs-in-een-vreemde-taal/clil-content-and-language-integrated-learning

CLIL: Content and Language Integrated Learning. (n.d.). Retrieved from https://onderwijs.vlaanderen.be/nl/directies-administraties-en-besturen/onderwijsinhoud-en-leerlingenbegeleiding/secundair-onderwijs/clil-onderwijs-in-een-vreemde-taal/clil-content-and-language-integrated-learning

European Commission. (2023). Erasmus + Programme Guide (Version 2: 21-12-2022) [Brochure]. Retrieved from https://erasmus-plus.ec.europa.eu/erasmus-programme-guide.

Helm, F., & Acconcia, G. (2019). Interculturality and language in Erasmus+ Virtual Exchange. European Journal of Language Policy, 11(2), 211-233.

Köylü, Z. (2023). The ERASMUS sojourn: Does the destination country or pre-departure proficiency impact oral proficiency gains? The Language Learning Journal, 51(1), 48-60.

Martens, L., & Van de Craen, P. (2020). Klaar voor CLIL. Leuven / Den Haag: Acco.

Multilingualism, the language of CIVIS. (n.d.). Retrieved from https://civis.eu/en/civis-courses/multilingualism-the-language-of-civis

Ohlberger, S., & Wegner, C. (2019). CLIL modules and their affective impact on students with high English anxiety and low self-efficacy. Apples - Journal of Applied Language Studies, 13(3), 1–15. https://doi.org/10.17011/apples/urn.201906253409

Strobbe, L., & Sercu, L. (2013). Je vak in een vreemde taal? Wegwijzers voor de CLIL-onderwijspraktijk. Acco.

Traineeships abroad for students. (n.d.). Retrieved from https://erasmus-plus.ec.europa.eu/opportunities/opportunities-for-individuals/students/traineeships-abroad-for-students

Van de Craen, P., Surmont, J., Mondt, K., Ceuleers, E., Lechner, C., Egger, G. (2012). Twelve years of CLIL Practice in Multilingual Belgium. In Egger, G., & Lechner, C. (Eds.), Primary CLIL Around Europe: Learning in two languages in Primary Education (pp. 81-97). Marburg: Tectum Verlag.

# SERVICE DESIGN AND EMPATHY IN ACTIVE LEARNING

**Johanna Hautamäki, Jari Isohanni**
Centria University of Applied Sciences (FINLAND)

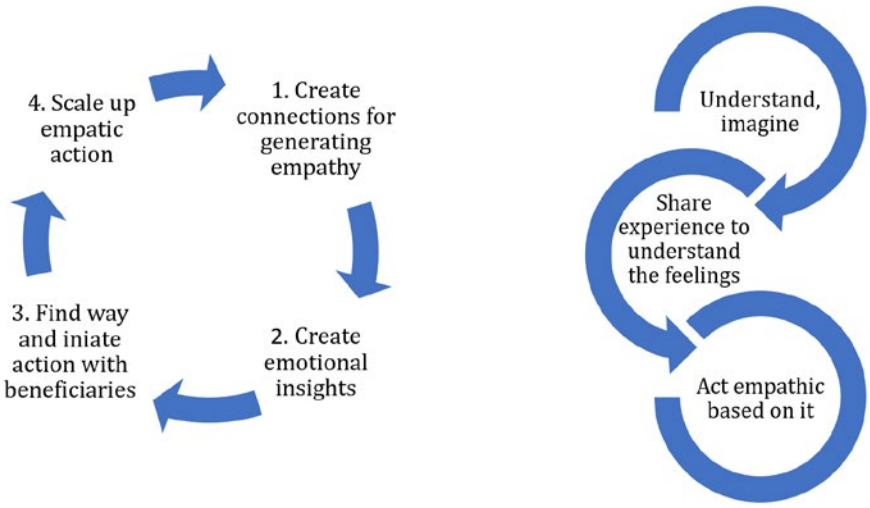
## ABSTRACT

Our environment and society have been under dramatic changes in recent years. To be able to anticipate the changes and to be resilient we need an agile and empathic approach. Digitalization is challenging our ability to stay human centred while interaction and businesses are shifting to on-line (Gonzalez Vazquez et al., 2019, pp. 31, 33). For operating in the changing environment in working life as well as in education, the demand rises for developing diverse soft skills such as critical and creative thinking, learning skills, self-regulation, empathy and collaboration skills (OECD, 2018, p. 5; Heikkinen & Österberg, 2012). To support this development this chapter is focusing on active teaching methods with service design and empathy, what kind of approach and tools they can bring to this skill set with practical examples.

**Keywords:** Service design, empathy, active learning, experiential learning, learning by making.

## 1 SERVICE DESIGN AND EMPATHY

Empathy is transformative by nature. Seeking understanding on other people's experiences and feelings, attempting to put yourself in another person's position and act based on this. It can be seen as the capacity to understand the elements, emotions, realities and situations of other people (Gonzalez Vazquez et al., 2019, p. 31, 33).




**Picture 1: There are different approaches on how to describe the empathic process (Gonzalez Vazquez et al., 2019, p. 31, 33; Hautamäki, Mäkitalo, & Hautala, 2020, pp. 14-16)**

Simple reasons for needing empathy in learning and working life are for better teamwork, communication, co-creation and customer understanding. When we understand better other people's views the communication and cocreation deepens. The way we empathize and the quality of interaction are big factors in collective problem-solving and co-creation. To be able to understand each other's we need to accept that emotions are a big part of decision-making and reasoning. Empathy is a skill for understanding emotions and it can be used for different

purposes. We need empathy to be able to create conditions for effective co-operation which includes psychological safety, trust, structure, meaning and effectiveness of work process (Hautamäki, Mäkitalo, & Hautala, 2020, pp. 14-16).

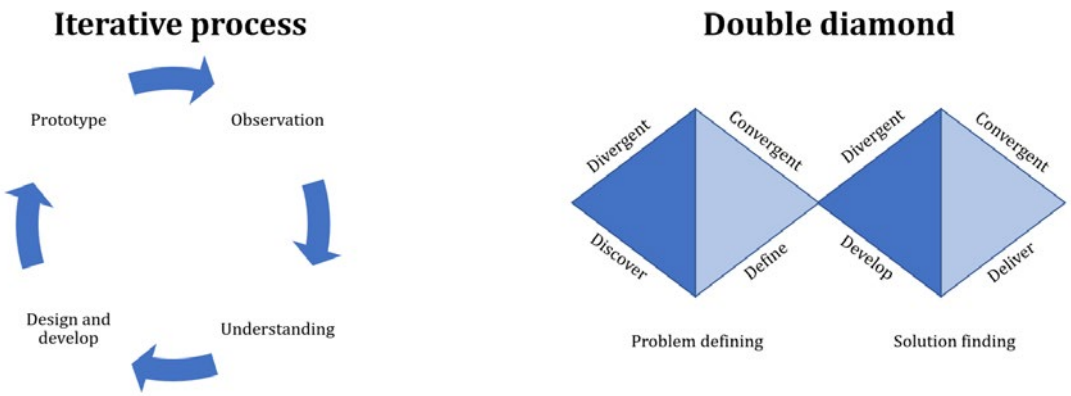
Service design is a multidisciplinary and human centred way of development. It raises a more holistic approach than mere focus on products or sales, a way to develop the whole organization's operations and customer experience with a participatory approach. The development with service design is based on human centred and empathic co-creation, visualization, prototyping and development through trial. With a systemic and holistic approach to development, a single service can't be developed individually, it is always a product of an organization's operations and interactions with the customer and stakeholders. A service design case can be about for example creating a new service, developing an existing one, creating a service strategy or developing organizations operations and interaction.

## 1.1 THE SERVICE DESIGN PROCESS

To briefly give some background, the purpose in service design process is to understand better the people's everyday life and then create shared understanding and solutions based on this understanding. To achieve this, we need empathy, co-creation and inclusive approach to the process from all the stakeholders, including organizations workers and customers.

The service design process starts by learning who the customer is. Mapping out the existing situation and customer experience is important. Even if the service that is being planned is a new one, there is still some existing way that some needs for the customer are currently met. By doing a stakeholder analysis and mapping out the current situation you define the correct problem that you need to be solving. All the stakeholders have relevant information and experience from their own perspective. By understanding daily life and with co-creation we can discover new possibilities that could benefit all stakeholders. Empathic approach in the service design process (Picture 2) creates deeper understanding for both defining the problem and finding solutions.

There are several ways to approach the service design process (Picture 2). The common thing in service design processes is to form understanding through participation, co-creation, visualization and empathy, the need to form understanding on the problem and how to solve it. The created ideas need to be tested in early stages with some form of prototyping. Through observing the prototype in action, we can form new understanding. This process can be iterated as many times as needed.




**Picture 2: Service design process has several phases and is iterative. Here are two basic models for an example (Sarantou & Miettinen, 2023; Design Council, 2019).**

# 2 PRACTICAL EXAMPLES ON METHODS FOR INCREASING EMPATHY IN ACTIVE LEARNIG

As the working life and society is changing rapidly, we also need understanding on the change and to be able to take in consideration the future needs in learning. The active learning, including creating empathy by using service design methods, can be a tool for this. Experiential learning is a form of active learning and an effective way to learn new things and it can be implemented similar to how a creative process works (Picture 2). In this approach learning is done with iterative cycles, so it deepens with each experience. Iteration can even bring conflicting experiences that make participants reflect more and turn experience in to skills and knowledge. Another approach to active learning, learning by making or creating emphasizes learning by problem solving with acquiring and processing information and co-creating. With this approach the most effective ways for learning are when students are observing and actively facing the everyday challenges that they will also come across in working life (Centria, n.d.).

## 2.1 EMPATHY EXPERIMENTS

Term empathy experiment refers to an activity that gives participants a possibility to simulate the experience, conditions and feelings, of another person in a specific situation. Empathy experiment is used to give more in depth knowledge and understanding than mere observation. When creating a service or a product it is important to understand the user, as well as the situation and context where it is used. Only the imagination is the limit to how these experiments can be conducted. They can be done with very in detail planning and expensive equipment. But they can also be done with imagination and a rapid prototyping way. The goal is to simulate the situation, the experience and the feelings related to it. You can't fully experience another person's feelings, but you can relate and empathize more this way. The experiment can be done in the actual environment or by having a theatre-like approach, stage and make participants imagine and experience. Here are practical examples on two different empathy experiments, first one in an actual environment and second one very much simulated way.

### 2.1.1 An empathy experiment for developing more active employee-oriented innovation culture in an organization

This experiment was done as a co-operation between Centria UAS research project and a local elderly care home. In this care home, they had a goal for creating inclusive and innovative workplace culture. They wanted the workplace to be a creative and inclusive environment for all the employees, so they would feel encouraged to innovate in their everyday work. They valued the experience and knowledge their staff had and wanted them to be part of making the place even better for the residents' as well as for the employees.

As part of this development process the staff in the elderly care home were doing two empathy experiments by putting themselves in the role of a resident (the patient). They experienced themselves how it feels to be lifted to a bed from a wheelchair with a lifting device. The exercise gave them insight on what to take in consideration when lifting a patient and understanding on how they feel in this situation. The other experiment was how it feels to pull and to be pulled outside in a case of an emergency with a special mattress. These kinds of mattress are mandatory in Finnish care homes (Picture 3). Participants gained confidence that they could operate in a case of emergency (Sarantou & Miettinen, 2023).

**Picture 3: The staff participating in empathy experiments as residents (patients) and different staff roles. It is important to create a safe space for the experiments so that participants can feel comfortable to act.**

During these experiments the staff was able to experience new aspects related to their work from the residents' point of view. This experiential learning gave them new ideas on how they can develop their own work and the facilities for the benefit of the residents. With these kinds of methods, the staff was activated in their approach to the work, to take ownership and to be creative in developing their workplace. These experiments also helped the process of creating more inclusive organizational culture. The feedback from the participating staff stated that these kinds of experiential methods were found a very efficient way of learning. The management also planned for the methods to stay in use in future, included as part of new staff training (Sarantou & Miettinen, 2023).

### 2.1.2 Experiencing the daily life challenges that elderly people face

Centria organized a theme day "Kokeileva Suomi" in 2017 as part of a national government project. During the event people participated in empathy experiments for experiencing some of the elderly people's daily challenges (Picture 4) and to learning by creating in a workshop. The goal of the day was to, based on the empathy experiments, for participants to come up with solutions improving the everyday life of elderly people. Participants were given challenges to tackle, issues in everyday life like loneliness, memory loss, physical limitations and safety. The empathy experiments were organized by Centria healthcare students as part of their studies. A video of the day is available (in Finnish), showing what type of empathy methods were used (Saarikivi, 2018).

**Picture 4: Participants are experiencing what it feels like to do everyday things with disabilities. Here in a screen shot of the video on the day (Centria, n.d.) participants are experiencing eating with their eyesight been limited to simulate different stages of blindness.**

The empathy experiments helped the participants to understand a very different everyday life experience in a practical level and empathize to a part of the elderly people's inner life. Even though participants from different age groups can't share the same emotions, experiments gave more insight to empathize than mere observation would have. To further deepen the customer understanding there were also some elderly people participating, people who identified themselves as the target group here. Everyone had the opportunity to discuss the situations and experiences with them. These elderly people also worked alongside with other participants during the day. In this case the experiential learning with empathy experiments gave common ground and depth for communication and understanding the inner life and challenges of the target group during the co-creation phase.

## 2.2 VISUALIZATION AS A TOOL FOR BETTER COMMUNICATION AND INCREASING EMPATHY ON THE USER

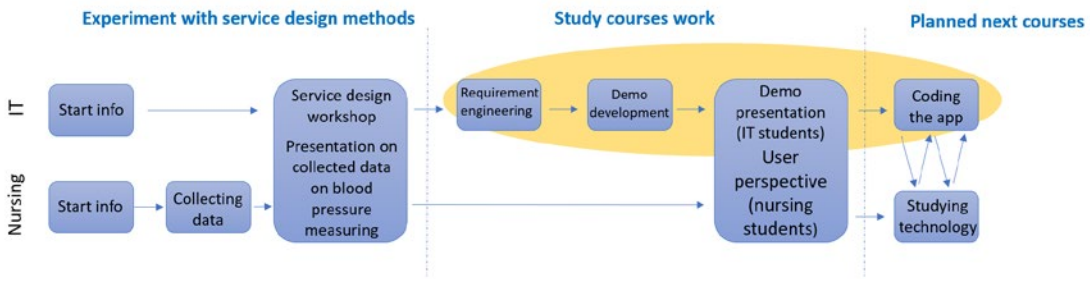
Service design processes as well as teamwork in most workplaces are usually multidisciplinary. In working life, the situation is often the same and so students need to learn how to communicate and operate in the multidisciplinary environments. Different types of visualization and prototyping techniques are useful tools for this communication. The tools can help increasing empathy as well as deepen understanding and communication within a diverse team. Visualizing creates more shared understanding than just verbal communication. Creating a persona with a visual element to represent a customer or other stakeholder will help create shared understanding. It helps recognizing the different perspectives or views between team members and increase empathy within a team (Hautamäki & Hautala, 2018). It helps a design process to be more inclusive. Different visualization tools advance co-operation and serve as prototypes. Visualization can also represent the future vision of the customer or the customer journey.

### 2.2.1 Creating value to IT and nursing study courses with empathic service design approach

Software designers often need to act as a social link between stakeholders, their requirements and the rest of the development crew. Still, practical software projects in higher education organizations are usually lacking the essential engagement of social connection (Centria Bulletin. 2018. n.d.).

In this practical example, the service design methods customer profile and customer journey were used to help multidisciplinary team to create shared understanding, increase empathy, to communicate better and co-create user centred ideas. The IT- and nursing students were studying in two individual study courses (Picture 5). IT students were developing apps for collecting blood pressure measurement data wirelessly from the blood pressure monitors as an assignment for their basic programming course. This app was for nurses to collect data from

measuring devices to support the care process of individual patients. At the same time the nursing students were learning about health care technology in their course.




**Picture 5: IT and nursing students had two separate study courses but worked together for the mutual benefit. IT students had a basic programming course and nursing students a healthcare technology course (Weber & Thielen, 2020)**

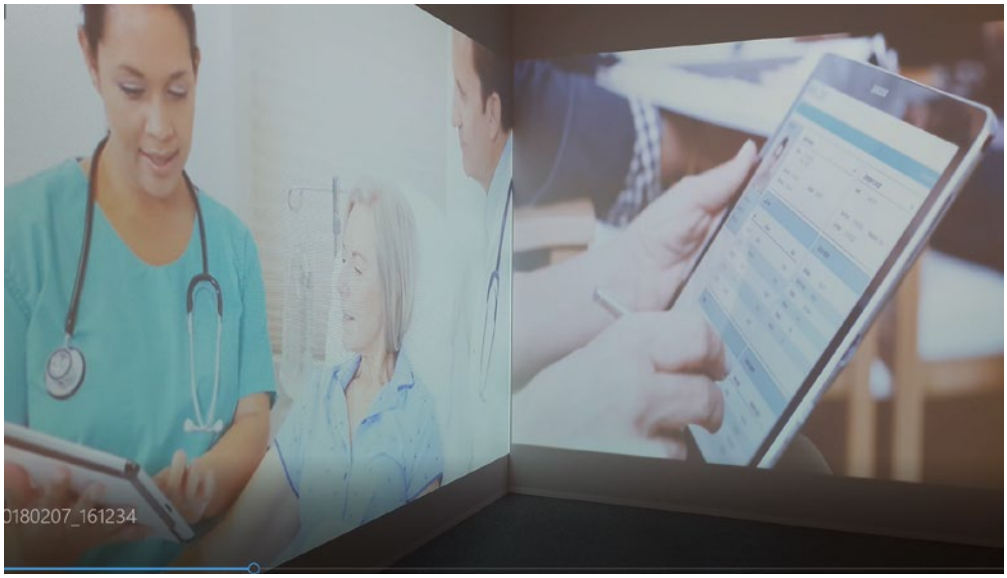
Its common that when IT-students are learning product development teachers jump directly into requirements engineering. In this case the process started with a workshop including the nursing students as the users. Students worked in multidisciplinary teams; this setup reflects real work-life process better than process that has been used in the past.

The service design workshop used here had four phases, students working in four-person multidisciplinary teams each with two IT students and two nursing students:

1. Nursing students presented to IT-students a data package that they had collected on the blood pressure measurement, why and how it is done.
2. Each team created a profile of a nurse (Picture 6) to visualize the profile of the app's user. These profiles helped to create shared understanding amongst the team on the user and their needs by building empathy on the user.


**Picture 6: An example on the profile template that students used in the workshop. Teams had both male and female nurse profile templates available**

3. Students co-created ideas on what would this persona do while using the app one time. What needs app was filling and what value it would create for the patient, the nurse and to the care process in general. These ideas were then crystallized into a visual customer journey, a story of the nurse using the app once.
4. Stories were presented as a simulation on the user experience. Stories were told as a type of cartoons (Picture 7), presenting the frames you need to get the whole experience told. After each presentation the customer journeys were reflected between all the teams and the teachers.




**Picture 7: All the presented customer journeys were recorded for the students further use in their courses. Here is a screen shot on one of the journey videos.**

The benefits of this kind of multidisciplinary teamwork with active learning methods in this case were:

- The students were able to practice in action their communications skills within multidisciplinary teams. With increasing amount of digitalization and technology in health care sector there is a growing need for nurses and IT-experts to know how to communicate with each other. Students were also international, so this made it more diverse.
- Participants gained experience in multidisciplinary user centred design and empathy building as part of it.
- Learning by creating is a deeper learning experience than studying merely with theory.
- The whole study courses didn't need to be redesigned, they were merely partly co-operating in a new way and there was new value added to both courses with the new part.

# 3 CONCLUSIONS

As a conclusion, the better you understand differences between the customers, the better services you can create. Empathy can be seen as series of assumptions and we can't stay on the level of assuming if we want to be accurate. It requires attention, presence, experiences, the motivation to understand and relevant previous or new experience to be more valid and accurate with the work (Hautamäki, Mäkitalo, & Hautala, 2020, pp. 14-16).

Building empathy with service design methods works well as active learning methods. The focus doesn't have to be in service design or empathy itself, they work very well combined to other methods that you might be used to working with in different fields. The nature of these methods is inclusive and co-creative, they can help you create shared understanding and therefore better communication within teams and for presenting the work to stakeholders.

# REFERENCES


Centria Bulletin. (2018). Retrieved January 3, 2023, from https://centriabulletin.fi/yhdessa-olemme-enemman-monialaista-yhteiskehittamista-palvelumuotoilun-keinoin/

Centria. (n.d.). Empathy experiments [Video file]. Retrieved from https://www.youtube.com/watch?v=u2nli3rDk7g

Design Council. (2019). Company website. Retrieved January 3, 2023, from https://www.designcouncil.org.uk/

Gonzalez Vazquez, I., Milasi, S., Carretero Gomez, S., Napierala, J., Robledo Bottcher, N., Jonkers, K., Goenaga, X., Arregui Pabollet, E., Bacigalupo, M., Biagi, F., Cabrera Giraldez, M., Caena, F., Castano Munoz, J., Centeno Mediavilla, C., Edwards, J., Fernandez Macias, E., Gomez Gutierrez, E., Gomez Herrera, E., Inamorato Dos Santos, A., Kampylis, P., Klenert, D., López Cobo, M., Marschinski, R., Pesole, A., Punie, Y., Tolan, S., Torrejon Perez, S., Urzi Brancati, C., & Vuorikari, R. (2019). The changing nature of work and skills in the digital age, EUR 29823 EN. Luxembourg: Publications Office of the European Union.
Retrieved from https://publications.jrc.ec.europa.eu/repository/handle/JRC117505

Hautamäki, J., Mäkitalo, T, Hautala, M. (2020). Tulevaisuuden työelämää varten [For the Future of Working Life]. Raportteja ja selvityksiä, 42. Centria-ammattikorkeakoulu. Retrieved from https://urn.fi/URN:NBN:fi-fe2020052739352

Hautamäki, J., Hautala, M. (2018). Yhdessä olemme enemmän! –Monialaista yhteiskehittämistä palvelumuotoilun keinoin. Centria-ammattikorkeakoulun verkkojulkaisu, Centria, 14-16.

Heikkinen, S., Österberg, M. (Eds.). (2012). Living Lab ammattikorkeakoulussa [Living Lab in Universities of Applied Sciences]. Vantaa: Multiprint.

OECD. (2018). The future of education and skills: education 2030. Paris: OECD Publishing. Retrieved from https://www.oecd.org/content/dam/oecd/en/publications/reports/2018/06/the-future-of-education-and-skills_5424dd26/54ac7020-en.pdf

Saarikivi, K. (2018). Empathy, emotion technologies and human experience. In the Evolving Role of Service Design. HKISDNC18. Retrieved from https://www.youtube.com/watch?v=gufub7Ee480&t=13s

Sarantou, M., Miettinen, S. (Eds.). (2023). Empathy and Business transformation. New York: Routledge.

Tamburri, D., Razavian, M., Lago, P. (2013). Teaching Software Design with Social Engagement. In Software Engineering Education Conference, Proceedings. 10.1109/CSEET.2013.6595237.

Weber, J., Thielen, B. (2020). The Challenges of Unlearning Company Culture. Touchpoint Journal, 11(3), 44-47.

# LEARNING TO LEAD - AN EXPERIENTIAL LEARNING SETTING

**Jürgen Radel[1], Roland J. Schuster[2]**
[1]HTW Berlin – University of Applied Sciences (GERMANY)
[2]University of Applied Sciences BFI Vienna (AUSTRIA)

## ABSTRACT

In the following paper, a learning setting is described that uses the actual experiences of the participants (students in a data science and project-management master's program) to help them reflect on their own impact on a group, as well as the impact of the group on them. By working together on different group tasks, behavioral data about individual leadership and collective dynamics are generated that can be reflected on together. The modular approach described here seems to be especially helpful for students who are usually not exposed to so-called soft skills topics (e.g. communication, leadership, influencing and negotiation) during their study programs. One benefit of the modular design is that participants are gradually exposed to increasingly complex and personal concepts that would otherwise be rejected to avoid cognitive dissonance. The experiences in the setting we describe should help participants to become more effective leaders by helping them understand the unconscious dynamics of social systems.

**Keywords:** experiential learning, leadership, didactics, group dynamics, systems psycho-dynamics.

## 1 INTRODUCTION

The research presented here is from the field of action research and is thus distinguishable from both quantitative and qualitative areas of research or science (Grossmann, Scala, & Lobnig, 2007, p. 57; Grossmann, Scala, & Lobnig, 2007, p. 57; Collaborative Action Research Network, 2023). For the orientation of the readers, Shani and Pasmore's definition (Shani & Pasmore, 1985) of action research in the organization development context is quoted here:

"Action research may be defined as an emergent inquiry process in which applied behavioral science knowledge is integrated with existing organizational knowledge and applied to solve real organizational problems. It is simultaneously concerned with bringing about change in organizations, in developing self-help competencies in organizational members and adding to scientific knowledge. Finally, it is an evolving process that is undertaken in a spirit of collaboration and co-inquiry."

The applied method is a subcategory (Cassell & Johnson, 2016) of action research: the intervention research of the Klagenfurt School. In a nutshell, the Klagenfurt School replaces learning theories with social interventions (Schuster & Radel, 2020). Schuster comes from the Klagenfurt school of intervention research and has been cooperating with Radel, whose specialty is human resource development and research, since 2016. Radel and Schuster have jointly designed, developed and researched the course in the context of an Erasmus+ collaboration.

The primary goal of this course is to prepare students with different cultural backgrounds for leadership and followership roles. It is a learning-by-doing approach. In reflecting on their own actions by using selected cases (there and then), as well as in the context of the lecture (here and now), students experience choice points and the possibility of owning their decisions. The term choice point is intended to indicate decision possibilities and the associated option to choose. In everyday situations, especially under time pressure, choice points are often overlooked.

# 2 METHODOLOGY

The method presented here intends to improve the ability of all participants to create awareness of current social relationships and organizational conditions. The body of knowledge is intervention science and its application is intervention research (Lesjak, 2009). The method of intervention research involves being in touch with each other in the here and now as an essential element of collaborative learning-by-doing (Reese, 2011). In order to realize this collaborative learning-by-doing, some conditions should be considered.

- Two lecturers should be present to meet the complexity of the task and enable reflection on the process (Dorst, 2001).
- Lecturers should have group dynamics expertise. This should include the ability to support each other by intervision. Intervision means mutual support, which becomes necessary in those cases when the group or a student triggers unprocessed topic regarding the personal authority of the lecturers.
- Lecturers should be aware of their relationships, roles, personae and values in general.
- Lecturers should be able to reflect on their own relationships in the context of the ongoing process of the lecture (Turquet, 2019).
- Lecturers need to be aware that they are communicating their value stances and endure when students' value stances differ from their own.
- The understanding of a good-enough facilitation helps lecturers to detect own illusions of omniscience.
- Lecturers should be able to address their own emotions and talk about feelings. It depends on the situation whether this is done openly, in front of the group as open staff discussions, or behind closed doors. Open staff discussion is an intervention in itself. Open staff discussion means that the lecturers discuss their impressions of the process openly in front of the students. Closed-door discussions are necessary for decisions regarding steering the process and introspection.
- Lecturers should both be confrontational and act in a way that it is considered holding. To act holding means to reassure students and support them in their particularities.
- Lecturers should be aware that there is a different limit of possible development and capacity to reflect within every cohort and individual. It is rather about providing a space for development and not about pushing students to any limit.
- Lecturers should be aware of their own limits and check and protect those limits permanently during the process.

Due to the biological fact that the human body permanently takes in much more data by means of sensory organs than the consciousness can grasp, most of the human data processing happens unconsciously. Basically, consciousness can be seen as a scarce resource of human data processing (Nørretranders, 1999; Damasio, 1999). Due to the scarcity of the resource consciousness, human interaction is based on culturally shaped or practiced - unconscious - preconditions. The method presented here makes it possible to grasp the unconsciousness of social systems that exists in principle and at the same time trains a solution-oriented approach to it. This is achieved by a common reflection of jointly experienced communication. This reflection can make both unconscious cultural and unconscious individual behavior patterns conscious. Through this awareness, it is subsequently possible to experience decision-making competence. Only in this joint development of individual-within-group-within-organization, decision-making competence makes it possible to enter relationships with each other and to own the decision. This includes the lecturers as well. An appropriate metaphor for the situation in total is that of self-similarity. Self-similarity in the broadest sense means that a structure repeats itself. The level of detail is not relevant for the structure, so to speak. A technical term for this is scale invariance.

Applied to the educational system, the self-similarity lies in the organization of the institution, which in turn is embodied by the teachers and passed on to the students. One facet of didactics is its implicit effect due to the organization of the teaching institution in which didactics is embedded (Kellermann, 1985; Kvale, 1972; Kvale, 2007). This means that lecturers and the educational institution always have an unconscious influence on students. Only reflecting together on behavior and institutional structures in the here and now in the given context can enable the reflecting persons to establish awareness. Basically, self-similarity of social systems is neither good nor bad, but without seeing through it, its change is not possible.

Like in fractals (Beutelspacher & Petri, 1996), where complex structures emerge based on some basic rules, coexistence within cultures is based on basic patterns. Those patterns are to a large degree unconscious. If the

transmission of such patterns to the next generation is not reflected, no conscious control or change of such structures is possible. The hypothesis of intervention science is that within educational institutions, a large part of relevant unconscious patterns is implicitly transmitted by the lecturers, the institutional structure and its organization (Henrich, Heine, & Norenzayan, 2010). Based on this hypothesis, the necessity of conscious decision is argued. It is not a matter of changing current conditions per se, but merely of producing awareness of them. The decision can be to keep the existing or to change it. Consciousness makes decisions possible. The teaching and learning goal of this type of didactics is that students are enabled to create awareness about their respective situations in each social context, to negotiate occurring interests and to make decisions based on this awareness. To achieve consciousness, it is necessary to capture unconsciousness to a certain degree and produce consciousness. To realize this, lecturers must enter unconscious realms together with the students, hence the term “explorative teaching” (Schuster & Radel, 2018).

Emotions are an essential source of data. From the point of view of intervention science, emerging emotions are a sign that conscious and/or unconscious boundaries (Schuster, 2021) have been crossed and are used to control the process. Too few emotions mean stagnation, while too many can lead to an escalation of the situation and the dissolution of the course. The difficulty of steering a joint reflection of behavior patterns is individually and culturally conditioned accesses to emotions or individually and culturally conditioned triggers of emotions.

The comparison of individually and culturally stored behavior or limits of perception (taboos) with the blind spot of the eye is apt here. This especially because it can be made clear physiologically what it means when one does not see what one does not see. The following experiment makes the physiological blind spot (the spot where the optic nerve pushes through the retina visible (Rookes & Willson, 2005).

Close your right eye. Hold the image about 20 inches respectively 50 cm, approximately arm length away. With your left eye, look at the black dot. Slowly bring the image closer while looking at the black dot. At a certain distance, the black beam will appear solid. An optical illusion of a solid black beam occurs. For the right eye, turn the page 180° and close your left eye (Chudler, n.d.). It is essential not to make the mistake of thinking that the one-time exposure of the blind spot is enough and that the associated consequences are known for all the future. Neither physiological nor psychological or sociological blind spots can be resolved. It is rather a matter of dealing with a biological fact in a satisfactory (“satisficing”, Sterman, 2000, pp. 601-602) way.

Behaviors stored in cultures enable peaceful coexistence within the culture in question. Deeply culturally rooted standardizations are not conscious because only this enables an economical handling of the scarce resource of consciousness. The problem with intercultural communication is that these behaviors can be very different in different cultures. As a result, behavior that is perfectly normal in one culture may deeply outrage people from another culture. But even within cultures, different habits can form, for example, in different industries. Think here of people who are socialized as technicians as opposed to those who are socialized as artists. Heintel and Krainer coined the expression “systemic contradictions” (Krainer & Heintel, 2015, pp. 251-260) regarding necessary contradictions that come with organizational processes.

The difficulty of a common reflection of unconscious structures in the context of a course is that this triggers fear. Habitual behaviors of lecturers, familiar organizational procedures and habitual focus on explicit content recede into the background. Emotions that are usually only discussed in private are suddenly in the spotlight of the teaching process. Lecturers appear as human beings and present, in addition to content expertise, with their personal emotional reactions regarding the events. Since the open expression of emotions, especially in the presence of superiors within a hierarchy, triggers fear and insecurity, the tendency is to try to remain in the usual “businesslike” relationship. Accordingly, the defence against expressing emotions is strong and happens on a conscious as well as on an unconscious level.

Students tend to expect and demand a familiar teaching setting, requiring lecturers to present explicit knowledge. Here, appropriate process competence of lecturers is required to overcome the fear and to guide the process in

such a way that reflection can take place. In the following, the basic working formats (different group sizes) and tasks are presented. The group dynamics perspective is described.

The size of the class excluding the two lecturers is 20-30 people, though 20 people is considered ideal. When all groups meet, it is called a plenary. Reflection happens also in groups of 3 or 4 people. In addition, working groups of 6-7 people are formed. The working groups should be as diverse as possible (age, gender, origin, etc.). The plenary, including 20-30 students and the two lecturers, is a large group.

The following table gives an overview of the different design elements.

**Table 1. Overview of group dynamics perspective.**

| # Of people | Designation | Task | Group dynamics perspective |
|---|---|---|---|
| 1 | Individual | Each student must bring a case that they have experienced themselves. The task is self-reflection. | As preparation for the course, written assignments must be submitted before the first unit. Through these assignments, students should be attuned to the nature of the course in advance. The goal of the assignment is to initiate self-reflection. In the first unit of the course, students are encouraged to keep diaries in order to continue self-reflection throughout the course. The final unit is a written reflection in which students present self-selected experiences from the course using recommended literature. |
| 2 | Team of lecturers | Working on internal individual authority. | For mental hygiene and to be able to manage the process well, it is necessary that the lecturers reflect with each other throughout the process (Turquet, 2019, pp. 87-144). The joint reflections are the basis for group dynamic interventions. It is important to distinguish between group dynamic and bureaucratic interventions. A bureaucratic intervention refers to the official written rules and regulations of the institution. A group-dynamic intervention refers to the group's mood in the here and now as perceived by the lecturers. |
| 3 | Coaching trio | Role differentiation, training of a coaching situation, training of observation and listening. | Within a peer coaching session, students work on actual issues. Students switch roles (coach, coachee, observer) and every student takes every role once. Peer coaching offers the opportunity to consolidate what has been learned so far. |
| 3-4 | Small group (trio, quattro) | Small group reflection, exchange of individual perceptions. | Three to four people have a good overview among themselves. In the small groups, it is easier to build trust with each other. Here, depending on the focus of the current teaching unit, students' own concerns are discussed. The small groups are created randomly and change with each new task. After the time has expired, the groups can briefly report on the course of the discussion in the plenary. |
| 6-7 | Working group | Working groups are given the task of preparing theatrical performances together. | The preparation of the theatrical performances requires an intensive examination of the chosen case. The inclusion of the body enhances the effect of the depicted situation. The working groups are formed on the first day of the attendance phase and remain constant until the third day. |
| 20-30 | Large group (plenary) | Students and lecturers discuss and reflect on the process of the course. | The large group is the main working area for the lecturers. Due to the potential for anxiety in groups of such size, it is important for lecturers to be mindful of group phenomena when opening spaces (Nitsun, 1996, pp. 61-63). Individual fears, frustrations and doubts are amplified in such groups. Special care and the involvement of all are needed to generate reflectivity in the plenary. |

In addition to the group dynamic perspective, the respective roles within the hierarchy of the educational institution are important and will be explicated by the lecturers on appropriate occasions in the here and now of the process. To ensure that all cases are interesting for the whole plenary, a condition for the selection is that they are cases with direct relation to the actual educational institution. Another condition is that the respective case-bringer must be personally involved in the case.

Figure 1 depicts the setting of the course, which is also a main aspect of the reflection. The plenary serves like a dashboard, steering the entire process. The goal is to improve the ability to reflect together on the organizational context in which all participants are involved.

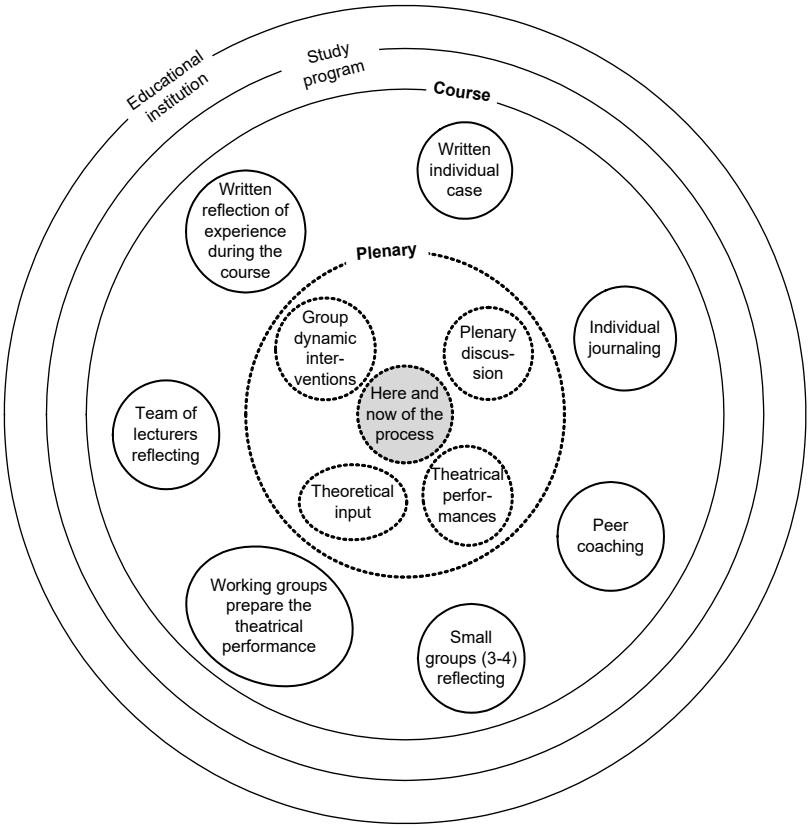



**Figure 1. Setting of the course.**

# 3 MODULAR ELEMENTS OF THE LEARNING SETTING

After presenting the different design elements and the setting of the course, in this chapter, we provide an overview over the different elements of the interpersonal dynamics course. The elements are arranged in a certain logic: they span two semesters at least, so that people are exposed to experiential learning for about one year. The interventions and modules are placed in the curriculum in a way that they become more complex over time and sometimes build on each other. They are also modular, which has the benefit that they can be changed by lecturers depending on their personal style, the broader context, or the needs of the group. The setting that is described here is also used in a master's program for data science and project management with a group of students from diverse cultural backgrounds. One goal is to provide students as participants with soft skills to become more efficient leaders in and of groups.

## 3.1 CHANGE MANAGEMENT AND LEADERSHIP

The group of students takes one class about change management and leadership in one semester, preferably the semester before the actual interpersonal dynamics course is offered. During the change management and leadership course, the theoretical foundation for the next two parts of the experiential learning setting is laid. Because of the nature of this paper, we are not able to illustrate the content in detail here. The goal is to open up the participants to reflections on systems psychodynamic processes (Lawlor & Sher, 2022) by discussing the there-and-then using Harvard business style case studies, as one example. Focusing on others (the protagonists in the cases) helps students to understand the dynamics and certain theoretical concepts like psychological defense

mechanisms to maintain a positive self-image (social or ego defenses, e.g., Bain, 1998; Fast, Burris, & Bartel, 2014). In our experience, people who are not used to reflecting on themselves are defensive about themselves when they are confronted with psychological/psychodynamic concepts too early. Talking about others and the theory first lays the ground for the second element of the learning setting, which is described in more detail.

## 3.2 90-MINUTE BRIEF SESSIONS

After the introduction to systems psychodynamics theories and first experiences with reflection, the students participate in a series of 90-minute sessions that can be held entirely online and that are conducted on a weekly basis or up to two sessions per week. The aim of these sessions is to shift the focus from others (those in the cases) to the students themselves and to blend a brief conceptual framework/theory with direct personal application. To do this, we propose the sequence of modular elements/topics as illustrated in Table 2. Each session usually has several elements. We start each session (starting with the second or third) with overnight thoughts, a reflection of what happened in between sessions, where we offer a space to bring in topics about the course that are still resonating with the participants. The underlying and adapted theory is social dreaming (e.g. Lawrence, 2003). We recommend planning 10 to 15 minutes for this part. Afterward, we introduce the topic of the session briefly to provide a structure for the reflection in small groups. Working in small breakout groups is one of the core elements of the sessions. To enable participants to work on their own in small groups, it is necessary to provide a clear structure and guiding questions. Some of them are presented in Table 2. The last element of each session is open plenary in which participants have the opportunity to share what came up in the small groups. We recommend planning at least 20 minutes at the end for this part of the session.

**Table 2. Overview of modular elements.**

| # | Topic | Remarks |
|---|---|---|
| 1 | Onboarding | In this session, we talk about the rationale of the course and how we are going to work together. We specifically stress the personal nature of the discussions we are going to have and that the students will learn more if they are more involved. |
| 2 | Johari Window | This framework (Luft & Ingham, 1961) has been proven to be very good at opening students while they discuss with each other. After presenting the framework very briefly, we ask the participants to draw their individual windows as they see them now (regarding the size of each window). Then: Think for yourself: What do you like about your window, what would you like to change? And: Take a second color and draw the changes that you would like to make. Afterward, we ask them to discuss the following questions in small groups: What would help you to make the quadrants X, Y, Z bigger or smaller? What do you want to do? What do you need from the group?<br>Finally, we offer space for reflection on the plenary, which is one central element in each following session. |
| 3 | Boundaries | This session, as all others that follow, will start with overnight thoughts<br>During the session, we introduce the concept of personal boundaries and ask students to reflect: What is your experience with your personal boundaries? What happens for you when your boundaries are too hard or too soft?<br>Afterward, they discuss the following questions in small groups: What are things that make it easier for me to let my boundaries down in this group? Are there times, when I want to raise my boundaries in this group? What would help me do that? How is this related to trust and safety in this group? |
| 4 | Who Am I? | This session offers the opportunity to reflect on one's own heritage by following these instructions after a brief introduction: Individually, write down 12 different aspects/roles of yourself: "I am ..., I am ..., I am ...". Then rank your 12 aspects/roles, from 1 to 12 individually. Afterward, share with your discussion partners in a small group. |
| 5 | Living Sociogram | Each student prepares a personal avatar (a picture) that is uploaded on Miro or a similar platform. Then we ask the students to move their avatars toward the center of a circle or away from it, depending on the questions we ask. Afterward, the process is reflected in the plenary. |
| 6 | Irrational Beliefs | Based on the concept of irrational beliefs (Ellis, David, & Lynn, 2010, pp. 3-22), students reflect their own irrational beliefs and discuss them in the small groups. This session is highly structured to guide them through the process of identifying and re-interpreting their irrational beliefs. |

| # | Topic | Remarks |
|---|---|---|
| 7 | Giving and Receiving Feedback | We introduce the concept of feedback and ask students to reflect on and discuss the following questions in three breakout sessions with different participants: What is your assumption about how you are seen in this group? Check out your assumption by asking for feedback. Question to others: What have I done that had an impact on you or the group from your point of view? |
| 8 | Trust and Safety | We ask students to rate their individual experiences of trust and safety in the group. Afterward, we reflect on the results in the plenary. |
| 9 | Group Development | After the group has spent between 4 and 8 weeks together, we reflect the development of the group and the stages it has gone through so far. |
| 10 | My Role in the Group | Students have to prepare various questions before the session that are discussed in small groups. Two of the questions are as follows: How is your role-taking supporting or limiting the development of this group? How about groups in your other working environment? |
| 11 | Sociogram 2 | This time, we use a more structured, tool-based approach to the sociogram and vary the questions so that they become "riskier" to answer. This module can be skipped, if needed. |
| 12 | Closing and Opening | In this module, we reflect the learning so far, provide an outlook on the next part or the course and ask participants to define individual learning goals that are visible for everyone. |

Depending on the flow of the discussion, it might be that overnight thoughts take significantly longer than planned. In such a situation, we suggest splitting the topic and continuing the discussion during the next session.

Additionally, it might be possible that participants are quiet during overnight thoughts or talk about random topics outside of the group work. Both can be signals that the pressure/uncertainty and therefore anxiety is high and that the participants are fleeing from the pressure. During the open space in the plenary at the end of each session, it might be possible that discussions are slow in the beginning. This might be an attempt by the group to draw the lecturers in again. Here, it is important to hold the space and be able to endure the silence as lecturers as well.

## 3.3 ON-SITE GROUP DYNAMICS

In this part, we shift the perspective toward the group itself. The primary goal of another 4 days, as an addition to and extension of the modular elements, is "to learn about yourself as an individual within groups, through the examination of our experiences together." In the following section, the 4 days are briefly described.

Each day starts with overnight thoughts and mainly consists of tasks that are given to the group. By working on the task (the what), data are generated. We consider every behavior as data, neither good nor bad, that can be reflected on by looking at the process (the how) in terms of the group dynamics.

During the first 3 days, we increase the dynamics within the groups, which can be stressful for students and lecturers. On the last day, we take time to close any open topics and contain the emotions.

### 3.3.1 Day one

We start the day by reflecting on those aspects of ourselves that have influenced us significantly, like our social upbringings, genders, gender identities, professions, significant others and so on. This sharing at the beginning supports deep connections between the participants. Based on experience, the discussion in the small groups is intense and impactful, which is important for the next steps.

Afterward, we ask students to reflect on how they appear in a group by asking them how they want to be seen and how they might come across (like someone they do not like), which provides the opportunity to talk about projections and projective identification, for example.

The first task of the day that involves the whole group is the formation of sub-groups that are maximally diverse. We also tell the participants to argue and find a good solution all are happy with, avoiding conflict resolution

techniques like voting or trading, because that would cover up conflicts. This process usually generates a lot of behavioral data, which is reflected on afterward.

### 3.3.2 Day two

We asked students to prepare stories that emotionally touched them. Usually, these stories show a dilemma that is still unsolved and from the study program they are all involved in, which is important to create emotional involvement in the cases.

Students then work in the groups they created the day before (working groups, see above) and exchange stories. They then have to rank them based on the learning potential of each story. The criteria for the learning potential are developed by each group as well. The result is a list of 6 to 7 stories, depending on the number of participants in each group. Those stories are ranked. Then the groups (usually groups of 4-5) present their ranked stories in the plenary so that everyone knows which stories are in the room. Then we ask the groups to create a ranking of the top 2 stories from each group. For example, if there are 4 groups with 5 participants each, there are 8 stories. These stories are already defined as relevant in each small group, which creates tension in the large group. Students then must decide overall criteria for the learning potential and then rank the stories. We explicitly tell them that we might not be able to work through all of the stories the next day, which leads to stress. This process creates a lot of tension and thus behavioral data that we reflect on afterward.

At the end of the day, students are told that they must prepare a performance for each of the 8 stories. They should be as creative as they can be. The only rule is that no PowerPoints may be used. The principle we adapt here is company theatre (e.g. Nissley, Taylor, & Houden, 2004; Schreyögg, 2001).

### 3.3.3 Day three

The whole day is devoted to reflecting on the performances. Starting with the first story (highest ranking), the groups perform the stories. After each 5-10-minute performance, the performers turn their backs to the plenary and the plenary starts to share feelings, thoughts, associations and metaphors that came up during the performance. Afterward, the performers turn back to the group and share what is resonating with them after hearing the plenary talk. Usually, each story reflection should not be longer than 30 to 45 minutes. We often end after 4 performances and move to peer consultation, in which students can apply the reflective process in which they have participated in the plenary and coaching trios (see above). This is helpful to work on open stories/dilemmas, if necessary.

### 3.3.4 Day four

The purpose of this day is to close any unfinished topics from an emotional perspective. We do not open new topics and avoid focusing on issues that we might see. Students reflect on their learnings and provide appreciation to each member of the group by writing down one aspect for each participant that they appreciate. Each of the 20 participants receives 19 slips of paper (or virtual cards on Miro) with personal appreciations from the other participants. Reading these leaves participants with a positive mood and helps to deal with the stress of the past 4 days. It also re-connects the individuals of the group in case of stressful experiences before.

# 4 CONCLUSIONS

The modular concept that has been described here seems to have a significant impact on students, especially in the STEM field (science, technology, engineering, mathematics), when they have rarely experienced soft skill training. The classes with an experiential learning approach are often described as stressful by the students, but also as timely and valuable when they want to lead a team afterward.

So far it is not entirely clear what the specific impact is, what exactly and how people learn, besides qualitative research. One potential next step might be to define specific changes that are triggered by the approach and to measure these changes.

Finally, we would like to stress again that the lecturers should have profound experience with group dynamics and related fields themselves. The approach that has been presented here can be adapted but should be handled with care, keeping in mind that the lecturers should have sufficient experience with group dynamic processes.


## ACKNOWLEDGEMENTS

The authors would like to thank Susan (Sue) Ries Lamb from the NTL Institute for Applied Behavioral Science, who supported the development of the short 90-minute learning sessions by providing feedback and suggestions, especially about the reflection questions, during the first run at the HTW Berlin.


# REFERENCES


Bain, A. (1998). Social defenses against organizational learning. Human Relations, 51(3), 413-429.

Beutelspacher, A., & Petri, B. (1996). Der Goldene Schnitt (2nd rev. and expanded ed.). Heidelberg: Spektrum Akademischer Verlag.

Cassell, C., & Johnson, P. (2016). Action Research: Explaining the Diversity. In D. Coghlan & Shani, A. B. (Eds.), Action research in business and management (1). Los Angeles, London: SAGE.

Chudler, E. H. (n.d.). Color Vision. Retrieved February 8, 2023, from https://faculty.washington.edu/chudler/chvision.html

Collaborative Action Research Network. (2023). Retrieved from https://www.carn.org.uk/

Damasio, A. R. (1999). The feeling of what happens: Body and emotion in the making of consciousness (1st ed.). New York, NY: Harcourt Brace.

Dorst, B. (2001). Qualifikation und Kompetenz in der Gruppendynamik. In O. König & K. Antons (Eds.), Gruppendynamik. Geschichte, Theorien, Methoden, Anwendungen, Ausbildung (5th ed., Profil-Lehrbücher: Psychologie), 301–313.

Ellis, A., David, D., & Lynn, S. J. (2010). Rational and irrational beliefs: A historical and conceptual perspective. In Rational and irrational beliefs: Research, theory and clinical practice (pp. 3-22).

Fast, N. J., Burris, E. R., & Bartel, C. A. (2014). Managing to stay in the dark: Managerial self-efficacy, ego defensiveness and the aversion to employee voice. Academy of Management Journal, 57(4), 1013-1034.

Grossmann, R., Scala, K., & Lobnig, H. (2007). Kooperationen im Public Management. Weinheim und München: Juventa Verlag.

Grossmann, R., Scala, K., & Lobnig, H. (2007). Kooperationen im Public Management. Weinheim und München: Juventa Verlag.

Henrich, J., Heine, S. J., & Norenzayan, A. (2010). The weirdest people in the world? The Behavioral and Brain Sciences, 33(2-3), 61-83; discussion 83-135. DOI: 10.1017/S0140525X0999152X.

Kellermann, P. (1985). Politische Bildung: Erziehung zur Mündigkeit - Erziehung zur Anpassung? In N. Frei & P. Heintel (Eds.), Politische Bildung als Unterrichtsprinzip: Konsequenzen für die Universitäten (1st ed., pp. 91–99). [Place of publication and publisher information not available]

Krainer, L., & Heintel, P. (2015). Process-Ethics. In M. N. Weiss (Ed.), The Socratic handbook (pp. 251-260). Wien: Lit-Verl.

Kvale, S. (1972). Prüfung und Herrschaft: Hochschulprüfungen zwischen Ritual und Rationalisierung. Weinheim: Beltz.

Kvale, S. (2007). Contradictions of assessment for learning in institutions of higher learning. In D. Boud & N. Falchikov (Eds.), Rethinking assessment in higher education: Learning for the longer term (Repr., pp. 57–71). London: Routledge.

Lawlor, D., & Sher, M. (2022). An introduction to systems psychodynamics: Consultancy research and training. Routledge.

Lawrence, G. (2003). Social dreaming as sustained thinking. Human Relations, 56(5), 609-624.

Lesjak, B. (2009). Gruppendynamik als Interventionswissenschaft – eine neue Herausforderung? In Gruppendyn Organisationsberat, 40(1), 7–21. DOI: 10.1007/s11612-009-0049-z

Luft, J., & Ingham, H. (1961). The Johari window. Human Relations Training News, 5(1), 6-7.

Nissley, N., Taylor, S. S., & Houden, L. (2004). The politics of performance in organizational theatre-based training and interventions. Organization Studies, 25(5), 817-839.

Nitsun, M. (1996). The anti-group: Destructive forces in the group and their creative potential (International library of group psychotherapy and group process, pp. 61-63). London, New York: Routledge.

Nørretranders, T. (1999). The user illusion: Cutting consciousness down to size. New York, NY: Penguin Books.

Reese, H. W. (2011). The learning-by-doing principle. In Behavioral Development Bulletin, 17(1), 1–19. DOI: 10.1037/h0100597

Rookes, P., & Willson, J. (2005). Perception: Theory, development and organization. London, Philadelphia: Routledge. Retrieved from https://ebookcentral.proquest.com/lib/kxp/detail.action?docID=235308

Schreyögg, G. (2001). Organizational theatre and organizational change: Paper presented at the 60th annual meeting of the Academy of Management, Washington 2001.

Schuster, R. J. (2021). Learning by Experience: Emotions as border guards and signposts regarding unknown territory. In S. Ernst (Ed.), Emotionen in Wissensinstitutionen: Zur Bedeutung affektiver Dimensionen in Forschung, Lehre und Unterricht (1st ed., pp. 93–120). Bielefeld: transcript; transcript Verlag. Retrieved from https://www.transcript-verlag.de/978-3-8376-5735-7/emotionen-in-wissensinstitutionen/

Schuster, R. J., & Radel, J. (2018). A Reflection on the (Harvard) Case Method from a Group Dynamics Perspective: Connecting Transcendent Knowledge with Immanent Phenomena. In H. Gölzner & P. Meyer (Eds.), Emotionale Intelligenz in Organisationen: Der Schlüssel zum Wissenstransfer von angewandter Forschung in die praktische Umsetzung (pp. 279–314). Wiesbaden: Springer Fachmedien Wiesbaden.

Schuster, R., & Radel, J. (2020). Dokumentation des Teaching Labs zum Lehrveranstaltungstyp Projektarbeit. Working Paper Series by the University of Applied Sciences BFI Vienna, #111, 1-21. Retrieved from https://www.researchgate.net/publication/347657825_Dokumentation_des_Teaching_Labs_zum_Lehrveranstaltungstyp_Projektarbeit_Dieses_Teaching_Lab_wurde_im_Rahmen_des_Projekts_Innovative_Didaktik_durchgefuhrt_Dezember_2020

Shani (Rami) AB, Pasmore WA (1985). Organization inquiry: towards a new model of the action research process. In: Warrick DD (ed.) Contemporary organization development: current thinking and applications. Scott Foresman and Company, Glenview. [Reproduced in Coghlan D, Shani (Rami) AB (eds.) (2010) Fundamentals of organization development, vol 1, Sage, London]. Quoted from: Coghlan, D. / Shani (Rami), Abraham, B. (2016). Creating Action Research Quality in Organization Development: Rigorous, Reflective and Relevant. In: Coghlan, D. / Shani (Rami), Abraham, B. (eds.) Action Research in Business and Management. Volume IV, London: Sage. 305-320

Sterman, J. D. (2000). Business dynamics: Systems thinking and modeling for a complex world (pp. 601-602). Boston: Irwin/McGraw-Hill.

Turquet, P. (2019). Threats to identity in the large group. A study in the phenomenology of the individual's experiences of changing membership status in a large group. In L. Kreeger (Ed.), The Large Group. Dynamics and Therapy (1st ed., Maresfield library), 87–144. London: Routledge.

# A MEASURING INSTRUMENT AND A DIGITAL LEARNING ENVIRONMENT TO SUPPORT SOFT SKILL DEVELOPMENT

**Peter David, Siham Chaoui, Ellen De Bruyne, Sabrina Govaerts, Amber Hoefkens, Elena Van den Broeck, Gert Vanthournout**
AP University of Applied Sciences and Arts Antwerp (BELGIUM)

## ABSTRACT

During the last decade, a lot of research has been conducted, both at Flemish and international levels, on the importance of soft skills as well as soft skills education and training. (Cinque, 2016; MacDermott & Ortiz, 2017; Paterson, 2017; Sethi, 2016; Snape, 2017).

Consequently, soft skill development is gaining increased attention in both higher education as well as in workplace learning.

Soft skills are intra- and interpersonal (social) skills, essential for personal development, social participation and success in the workplace (Sethi, 2016). In today's global economy, soft skills (such as self-organisation, creativity or teamwork) are increasingly important. In its "Skills for 2030" study, the OECD stresses that social and emotional skills are becoming as important as cognitive skills. The skills needed include flexibility, empathy, responsibility and collaboration. (OECD, 2019). Institutions for higher education need to invest in providing their students with those skills.

However, institutions for higher education are unsure how to tackle skill gaps and mismatches with regards to soft skills. Teachers, mentors and coaches struggle with both measuring soft skills objectively and with supporting students in their soft skill development. Therefore, supporting the development of soft skills in students and creating educational support materials in line with this remains a challenge (De Bruyne, et al., 2023).

This article presents the project 'Kickstart Your Soft Skills' (KYSS) in which the KYSS-instrument was developed as well as its follow up project '360° learning' in which the digital learning environment 'Boost your soft skills' was developed. This contribution concludes with recommendations and success factors when deploying the KYSS-instrument and/or 'Boost your soft skills'-environment in educational programs. The article ends with three good practices of integrating the KYSS-instrument in institutions for higher education.

# 1 INTRODUCTION

To prepare students for future work and entrepreneurship the development of soft skills is crucial. However, no general understanding or definition of soft skills is applied in these contexts. Some refer to soft skills through the term generic skills, 21st century skills, future skills, essential skills, employability skills or transversal skills. In the present study we refer to soft skills as in line with: a set of non-technical skills and knowledge that underpin successful participation in work. They are non-job specific and are closely connected with personal attributes and attitudes (confidence, discipline, self-management, ...), social (communication, working in teams, ...) and management abilities (time keeping, problem solving, critical thinking, ...) (Dall'Amico & Verona, 2015).

## 1.1 IMPORTANCE OF SOFT SKILLS DEVELOPMENT

In a rapidly evolving labour market, companies and organisations must continuously innovate to remain competitive. Mere knowledge and expertise are no longer enough to build a flourishing career in this innovative environment. At best, students make the transition to the labour market with this adequate knowledge base (hard skills). However, soft skills such as communication, problem-solving and self-management enables them to adapt to the changing demands of their job (Sethi, 2016).

There is a growing demand for soft skills over the last decades and the wage return to soft skills is positive (Deming, 2017). According to Deloitte's Australian report 'Soft Skills for business success', two-thirds of all jobs will be 'soft-skills-intensive' by 2030 (Deloitte Access Economics, 2017). Employers are even becoming more demanding in terms of soft skills to be mastered as a Flemish study that analysed 191,232 vacancies proved (VDAB, 2021).

Additionally, young adults tend to underestimate the importance of soft skills at the workplace and overestimate their personal soft skill-level (Succi & Canovi, 2020). This skills gap applies to all European countries in which it has been researched, including Belgium, the Netherlands, Finland, Spain, Poland and Portugal (World Economic Forum, 2015; Vandeweyer, 2016).

## 1.2 GROWING NEED IN SUPPORTING SOFT SKILLS DEVELOPMENT.

Can this gap be solved? And if so: how? In a Malaysian study, 260 participants from 10 different companies received training around soft skills. The researchers concluded that there was a positive relationship between this training and employees' performance at work (Ibrahim, Boerhannoeddin, & Kayode, 2017). The Interreg project STEPS (2 Seas Programme) found that small and medium-sized enterprises in particular - do not have the resources to provide soft skills training for their employees. Nor do they have access to affordable tools or hands-on models that can help them to do so. (Weyland-Ammeux, 2014).

However, institutions for higher education are also unsure how to diagnose, monitor, assess and support soft skill development. Previous research indicates that also teachers and supervisors or mentors haven't enough access to useful and affordable tools or hands-on models and educational platforms for both measuring soft skills objectively and supporting students in their soft skill development.

In response to these observations AP University of Applied Sciences and Arts, the VDAB (Public Employment Service of Flanders) Groep Intro and Fabrica 360 (Bulgaria) started the Kickstart Your Soft Skills-project (KYSS) to develop a toolbox for measuring and supporting soft skill development (AP Hogeschool, 2021c). The digital toolbox consists of a validated self-assessment questionnaire that targets sixteen crucial soft skills. Filling in this online survey produces an individual feedback report for students or employees, but also additional feedback reports for teachers, mentors or (job)coaches. The generated feedback is score-specific. Finally, a limited number of supportive materials on soft skill development were incorporated in the instrument.

Within the follow-up project '360° Learning' the self-assessment has been extended to a multi-perspective assessment to get a broader, more realistic and accurate view of the level of soft skills (AP Hogeschool, 2020). Feedback is gathered from other sources as well, e.g. teachers, mentors, colleagues on an internship. Within this

project the Moodle based online learning environment 'Boost your soft skills' was developed. The environment provides support materials for both students and teachers/mentors or coaches. It contains interactive materials for students, coaching tools and process guidance, educational materials for coaches etc.

# 2 METHODOLOGY

## 2.1 SELECTING SOFT SKILLS

Methodologically, a broad inventory of soft skills was made by means of desk research: various existing soft skills models, scientific literature on soft skills and soft skills that were mentioned in the curricula of the study programmes were consulted. A selection was made of the most mentioned soft skills which were considered to be crucial skills for being employed in the labour market of the 21st century. It was striking that the most common and mentioned skills from models and scientific literature were very similar to the most mentioned skills in the curricula of the college courses (Hoefkens & David, 2021).

## 2.2 THE SOFT SKILLS QUESTIONNAIRE

The methodology for the development of the questionnaire started with collecting existing validated questionnaires and competence matrices from our University College. After selecting question items from these sources, we validated the content and linguistics with educational and field experts. Pilot versions of the questionnaire were administered to students in their final year of higher education and to job seekers in April and October 2020. In total 508 students and 368 job seekers completed the questionnaire. Exploratory factor analyses were used to select the best fitting items and reduce the number of items per scale. An initial validation study using confirmatory factor analyses as well as analyses on reliability and measurement invariance demonstrated acceptable to good construct validity and reliability. Analyses on the measurement invariance of the factor structure across gender and admission context (student vs. job seeker) showed that mean scores can be compared between the first, but not the latter (Hoefkens, David, & Vanthournout, 2021).

## 2.3 INDIVIDUAL AND GROUP FEEDBACK REPORTS

For creating the individual feedback report, we used the service design methodology. First, we mapped the needs and wishes of our users (n=15) and stakeholders (n=15) via a written exercise. Based on their input we developed a design framework including a listing of requirements. After several ideation sessions, 5 designers made 5 prototypes of the feedback reports. These prototypes were repeatedly piloted with users (n=13) and stakeholders (n=15) and consequently adapted and synthesized into a feedback report. The lay-out and content of the feedback report is intended to be such that the user is inclined to go through the content of the report spontaneously.

In developing the group feedback report, limited use was made of the service design methodology. First, we mapped the needs and wishes of our lecturers (n=7) and experts (n=5) also via a written structured exercise. This consisted of an out of the box thinking exercise and a perception exercise of three existing group feedback reports and their components. One type of group feedback report was clearly more appreciated. We used this existing template and adapted it to the content and lay out of KYSS, as well as to the preferences mentioned in the design framework. After that a prototype was piloted and after a few adaptations the final result was ready (Hoefkens, 2021).

### 2.4 SUPPORTIVE MATERIALS FOR COACHING PURPOSES

The 360° learning project used Educational Design Research as a methodological framework. It uses quantitative, qualitative and mixed methods to answer research questions and is valued in terms of its ability to improve educational practice. First, existing research and other sources about soft skills, 360° feedback and learning dashboards forms the foundation for initial and subsequent design decisions. Where possible, we therefore verify whether proposals from users are in line with findings from scientific research. Second, Educational Design Research follows a cyclic process in which intermediate designs are tested and adjusted based on empirical research. Third, the design process is also monitored through scientific methods so that the research can contribute to insights into the design process itself. To shape the design process, Service Design as additional framework was applied. Methods such as service design teams, blueprints, insight exercises, customer journeys, prototype testing and cocreation sessions were used. Stakeholders took part in this process: service design teams (n=3 with students, teachers, supervisors, researchers); consulting several experts in dashboard development (n=4) and learning and Moodle experts (n=5) (De Bruyne, et al., 2023).

## 3 RESULTS

### 3.1 SOFT SKILLS THAT ARE IMPORTANT TO BE SUCCESSFUL FOR FUTURE WORK AND ENTREPRENEURSHIP

The first objective was to select the most crucial soft skills that are important for the labour market of the 21st century. 16 soft skills were identified.

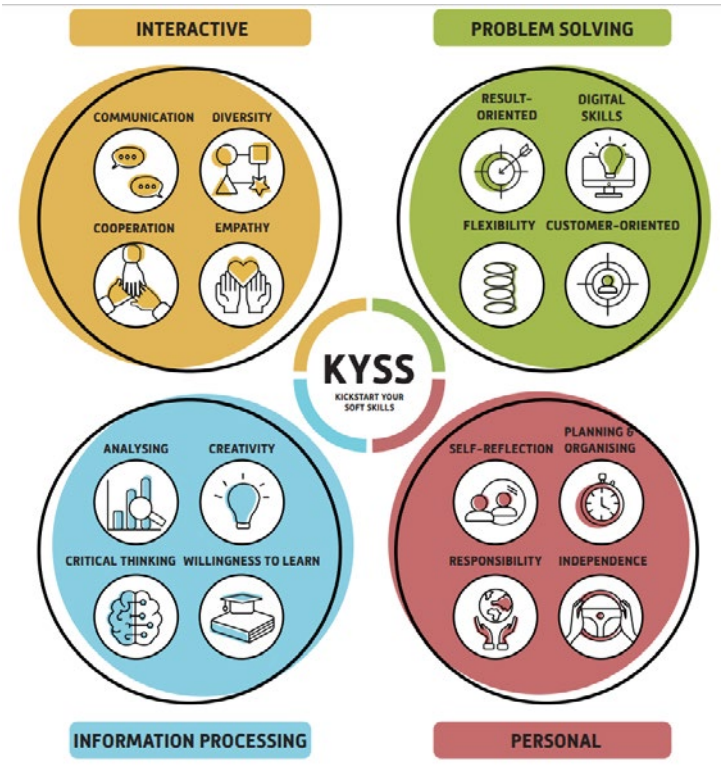



**Figure 1. KYSS soft skills model (Hoefkens, 2020)**

The identified soft skills can be categorized in four main clusters with four skills each. This selection resulted in the KYSS-model for soft skills (see Figure 1).

## 3.2 MEASURING SOFT SKILLS: A SELF-ASSESSMENT QUESTIONNAIRE

The development of the questionnaire resulted in a self-assessment questionnaire containing 4 to 7 items per soft skill. All items are to be answered on a 5-point Likert scale from 'Totally disagree' to 'Totally agree'. Due to the large number of skills, we included the possibility for teachers/mentors to reduce the size of the questionnaire by selecting the skills deemed most important for their students.

**Table 1. Example of survey items for one soft skill**

| Flexibility |
| --- |
| 1. I know that every situation requires a different way of working. |
| 2. I accept changes within certain tasks that I have to do. |
| 3. I adapt my way of working to the situation if necessary. |
| 4. I adapt easily when changes have an impact on work. |
| 5. I adapt easily when the situation changes (e.g. workplace, timetable, people I have to work with) |
| 6. I continue to work calmly and effectively in complex, uncertain and unfamiliar situations |

## 3.3. INDIVIDUAL FEEDBACK REPORT FOR STUDENTS

After completing the questionnaire, the participants immediately receive (by e-mail and/or in the tool) an individual feedback report (AP Hogeschool Antwerp, 2021b).

The objective of the report is to make the participants aware of what soft skills are, which soft skills are important in the workplace, of their level of mastery (compared to a norm group) and to encourage them to work at the development of their own soft skills.

The individual feedback report gives users an overview of how they score comparing to a norm group (see Figure 2), as well as an overview of their strengths and working points (see Figure 3). On top of that, the report contains a description of each skill alongside score-specific feedback and tips to strengthen their soft skills.

Because of the importance of soft skills in entrepreneurship, an additional option was provided. From each cluster 1 soft skill, that is important for entrepreneurship, was selected. The sounding board group and a project partner working on entrepreneurship selected these four skills: empathy, flexibility, creativity and self-reflection. In the individual feedback report, these skills are therefore listed at the top and are circled and marked with the word 'entrepreneurship'.

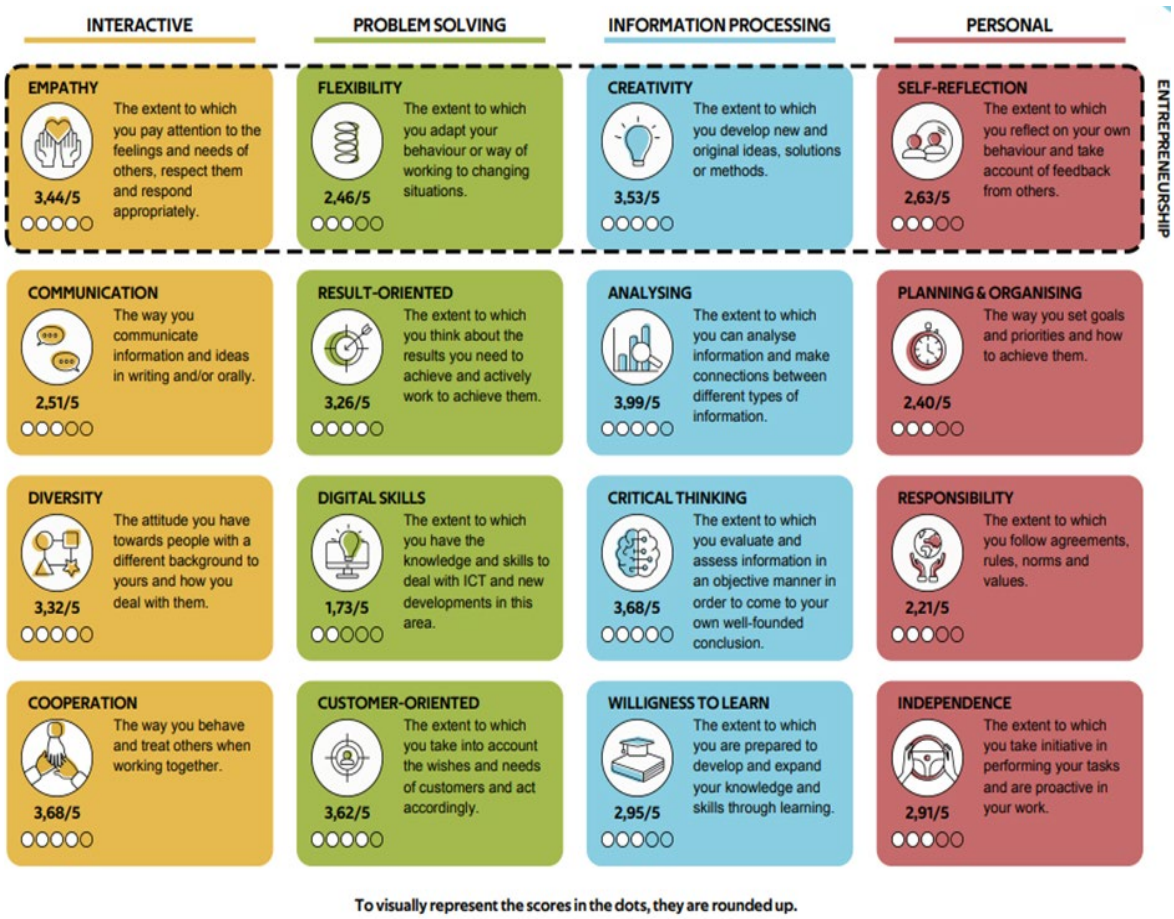



Figure 2. Scoring page from the individual feedback report


Figure 3. Individual report with the strengths and work points.

## 3.4 GROUP FEEDBACK REPORT FOR COACHES/MENTORS

Supervisors, mentors and coaches can generate a group feedback report in the tool. The group report provides data that allows the mentor to work on those skills where there is a gap or where talent-oriented development is needed.

The group report gives the mentor an overview of the results and mastery levels of his/her group per skill (see Figure 4) as well as the individual results. With a normal score: 4% achieve the red colour or dark green colour, 19% the orange or light green colour and 54% the yellow colour. Where dark red indicates high working point and dark green indicates high strength. Yellow is in between.

This visualisation makes it possible to organise targeted group coaching as well as individual coaching for those skills that still need growth or to work in an even more talent-oriented way on the basis of someone's strengths. Some additional static measures (boxplot, deviation, median) are also provided to enable targeted and data-based coaching (AP Hogeschool Antwerp, 2021a).

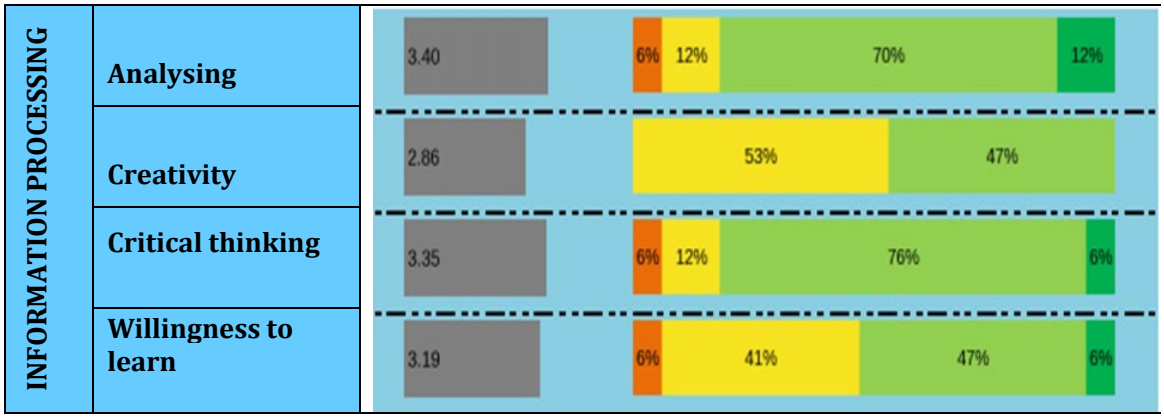



**Figure 4. visual of the mastery levels of soft skills from a group for 4 information processing skills: analysing, creativity, critical thinking and willingness to learn.**

## 3.5 ONE STEP FURTHER: A 360° APPROACH IN FEEDBACK - A VALID AND RELIABLE WAY OF ASSESSING SKILLS

However, usage of the KYSS-toolbox made it clear that it is important to triangulate self-report data with information from other sources to achieve a more valid assessment of actual soft skill levels and stimulate soft skill development. The '360° Learning project' aims at exploring how the KYSS-instrument could be expanded to include soft skill assessment and feedback from other sources. Therefore, this project developed the Moodle based online learning environment 'Boost your soft skills'.

So far, a prototype of an online 360° learning environment for soft skills improvement is developed in Moodle. For learners it contains an introduction on how to navigate, information about the importance of soft skills and about giving and receiving feedback through the environment, guidance on writing action plans and reflections, a 360° feedback form, a progress bar that indicates which milestones are taken as motivator in the environment and most of all: support materials for four soft skills (planning & organising, flexibility, willingness to learn and critical thinking). This structure and content meet the design principles that were set in the service design teams (Chaoui, et al., 2022).

The support materials are structured through three guiding questions per skill: what is this skill all about? Why is this useful? How to develop this skill? The last one contains assessment, reflection exercises, tips and tricks, good practices, testimonies in an active learning environment with use of quizzes, visuals, sorting exercises, knowledge fragments, choice exercises, etc.

A clear distinction between user roles was put forward between feedback givers and coaches. The feedback givers assess the development on soft skills, clarify given feedback and have no further commitment in following up the learners. They use the feedback form to give feedback. The coach is a facilitator of the learning process, challenges learners, discusses received feedback and action plans with learners. Our stakeholders learned that they need non-specific skill coaching material with the following components: tips on how to build awareness on the importance of soft skills by the students; provide guidance to raise good coaching questions; give examples of the importance of soft skills in a workplace context and tips on how to develop feedback literacy among the students (De Bruyne, et al., 2023).

Currently, further research is conducted and consists of a pilot study with three training courses in our institution. The central question is: to what extent does this learning environment supports awareness, reflection and behavioral change on soft skills? (AP Hogeschool Antwerp, 2022)

## 3.6 RECOMMENDATIONS AND GOOD PRACTICES WHEN WORKING ON SOFT SKILLS IN HIGHER EDUCATION

After 1,5 years, nearly 10.000 persons received their personalised individual KYSS feedback report (30% jobseekers, 60% students (professional bachelor (level 6) and higher vocational education (level 5)) and 10% teachers, coaches, mentors, professionals).

Through the use of the instrument in different contexts we learned more about the critical factors for a successful integration of the KYSS-instrument, as well as the 360° online learning environment. The following recommendations are based on experiences of stakeholders from the last two years, three practical testimonials from university colleges on the use of KYSS-instrument and preliminary experiences of three of our programmes that are implementing the 'Boost your soft skills' in their curriculum in the first half in 2023.

### 3.6.1 When and why?

KYSS and 'Boost your soft skills' should be used in a work context: as part of internship/workplace learning, in the run-up to a future job or to strengthen skills in a current job. If there is no workplace experience yet, as is sometimes the case with a first-year professional bachelor, it is also possible to reflect from holiday/weekend work experience. The connection with workplace experience is a necessity.

We recommend using the KYSS-instrument several times during a supervision: prior to, during and/or after internship/workplace learning. This in the context of a pathway to self-regulated learning for the students or a coaching route to a future job or a guidance route to strengthen soft skills in a current job.

The first use of KYSS will mainly raise awareness of which soft skills are important in the workplace and what the corresponding behavioral criteria are, as well as provide a first insight into the level of mastery of his/her soft skills. A second assessment, after additional work experience and/or coaching, will allow to see any growth and evolution. It then also allows to measure whether there is an impact of the planned actions to strengthen the skills.

### 3.6.2 Where and why?

The KYSS-questionnaire can be completed regardless of location (at home, at work, at school, ...).
People either receive an invitation e-mail sent by the educational institution, company or service organisation, or they can choose to take part in an 'open version' which is not organisation-bound:

Do the KYSS-test here:
https://kickstart.goleweb.be/en/take/3563.

**Figure 5. QR code to the KYSS test**

To reach a high participation rate, we advise to organise the survey either at school/work in the presence of a tutor or to link participation to a formal assignment such as, for instance, the mandatory uploading of the individual feedback report in one's own digital portfolio.

### 3.6.3 How and why?

Finally, for successful use, we recommend that training institutes, companies or organisations draw up a clear vision on (the development of) soft skills before starting to use the KYSS-instrument. Based on this vision, operational goals can then be formulated that one wants to achieve around this topic. Here, the KYSS-platform and the learning environment 'Boost your soft skills' can be a tool to reach the goal. For instance, in a curriculum reform related to professional learning, the KYSS-framework can help to develop a learning line. From educational literature, we know that functional implementation in education requires three academic years, with the first year serving as a pilot phase.

Integrating and adapting the KYSS-tool and the learning environment 'Boost your soft skills' in an existing guidance programme is an often used and successful strategy. There are quite a few educational institutions that already work with their own personal development plan and then choose to integrate a new soft skills programme including the KYSS-tool.

For the sake of reliability, it should be clearly communicated before the assessment that the assessment and (self) coaching are separate from the evaluative context but are only a part of a process guidance and growth process.

Nevertheless, integrating the KYSS-tool and/or the 'Boost your soft skills' learning environment does involve quite some changes. Organising kick-off moments by the training programme where the entire workplace learning pathway is addressed at once, certainly enhance successful implementation. A first kick-off moment is focused on the students and another kick-off moment is, quite parallel, focused on the feedback providers and coaches.

As mentioned above, during the kick-off moment for students, we advise to organize the KYSS-survey in presence of a tutor or mentor and have a first hands-on introduction to the 'Boost your soft skills' platform. The physical presence of the appointed coaches who also present their coaching can certainly create a warm connection with this person and motivates them to make use of this offer when necessary.

Most education partners who deploy the KYSS and/or 'Boost your soft skills', also use external motivation. Especially when students are not yet strong in self-regulated learning, which occurs mainly in the practice-oriented programmes of higher vocational education (educational qualification 5). This is done by awarding an evaluation (bonus) point depending on whether or not they complete a number of (reflection) assignments from the KYSS-tool or Boost Your Soft skills within the soft skills guidance programme. The content is not assessed here.

It remains important for successful implementation that the training programme can especially respond to internal motivation and makes clear to students what their self-interest is in strengthening soft skills for them: 'What's in it for them?'.

Furthermore, we recommend aligning the conceptual framework on soft skills in the training units with (part of) the 16 skills of the KYSS-model as this will strengthen the effectiveness of guidance and support.

In the KYSS-tool, there is the possibility to select the skills one wishes to question. We definitely recommend making use of this. Surveying sixteen skills with 98 questions may be too demanding for certain target groups. It is therefore

advisable to select those soft skills that are most relevant to one's own organisation or educational program. Or one could opt to work around the 16 skills spread over the various academic years.

For study programmes, the group results can provide very useful information about the profile of their own curriculum or give information if the necessary skills are present or absent in this student group. The data can also be used for (scientific) research. In this way, programmes and organisations can offer targeted support for the specific skills for which the skills gap between present and desired skills is the widest. It also allows a targeted selection of materials from 'Boost your soft skills'.

### 3.6.4 Who and why?

In what follows, we give a few examples of organisations that use the KYSS-tool and explain why. In case they approached it differently than previously described in the 'how and why' section, we will also explain. It can have an additional inspiring effect.

A first example of an organization using the KYSS-tool is the Hogeschool Gent. They used the KYSStool research-wise: this in the framework of a project 'efficient dual learning' with as one of the three research questions: What is the impact of dual pathways on developing 21st century skills? There they wanted to know whether certain soft skills develop clearly better in dual pathways. 5 courses were involved.

Odisee University College uses the KYSS in the higher vocational education for the program 'construction site organisation'. The students answer the KYSS-questionnaire in a first semester as an awareness of the topic of soft skills and as a start-up effect measurement. In the second and third semesters, there will be a processing/reflection assignment to collect illustrative examples of certain soft skills that pose problems in the workplace. These will also be discussed during the two networking moments when the various stakeholders sit together.

PXL University starts the programme with an initial assessment consisting of a learning skills and motivation questionnaire, a language test and the KYSS-questionnaire for the higher vocational education programmes. The intake results are discussed with a coordinator which allows for quick and targeted remediation. After receiving the results after the first semester, a first evaluation follows: if the study efficiency is too low, counselling measures will follow.

The KYSS-tool is used to assess work readiness and willingness to work and serves as a baseline for soft skills at the start of the programme. It allows the formulation of personal learning goals. In the various phases of workplace learning, progress in competences is monitored and adjusted when necessary: to this end, there is the interview already mentioned at intake. Later, there is the performance interview and evaluation interview, which are more evaluative and in between there are development interviews, which are growth oriented. The conversations cover both job-related knowledge and skills (work performance) and soft skills (work qualities). Both types of objectives are worked on through targeted assignments during workplace learning.

Finally, we also like to stress that the potential of the KYSS-tool and 'Boost your soft skills' are not the only tools for learners: many soft skills have to be developed further during life and they should be included in lifelong learning for personal and professional development.

# 4 CONCLUSIONS

Use The importance of soft skills for future work and entrepreneurship cannot be underestimated. Employers are even becoming more demanding in terms of soft skills to be mastered (VDAB, 2021). Higher education as well as the labour market are more and more conscious of the existing soft skills gap.

The current projects aim to hand over tools, methods and educational material to tighten, or narrow at least, this gap. Selecting the crucial soft skills, followed by constructing a validated self-assessment questionnaire was the first necessary step. The measuring instrument allows diagnosing, monitoring and assessing soft skills and respondents gain insight in their soft skills.

After completing the questionnaire, the participants receive the individual feedback report. In order to make the feedback reports as relevant and user-friendly as possible the model of the service design methodology was used: users and other stakeholders like coaches, teachers, mentors were included in a needs analysis using an online survey which resulted in a design framework. Then users took part in the co-creation of the prototypes. These prototypes were repeatedly piloted with users and stakeholders and consequently adapted and being synthetized to one prototype which resulted in the currently used KYSS-feedback report.

In addition, COVID regulations at the institution taught us to adapt and to try other communication methods in research. For example: for the need analysis and the prototyping feedback, we took the option to work with a very structured questionnaire instead of digital focus groups. It takes time to translate the content of and the methods used in a focus group into such a questionnaire to reach a similar goal. It obligates to cut the research question in limited steps which can be questioned. We experienced that the more structured the questionnaire was the higher the quality of the input. Although not everything can be replaced by the questionnaire, the input was very satisfying. Also, the response grade didn't cause problems as stakeholders had the choice to fill in when they wanted. Although it asked more preparational, it seemed to be worth it. A mixed method of digital preliminary tasks with a final focus group moment with the same partners seems to us a worthwhile research method to consider: is it a kind of flipping the classroom?

Once the results are there after filling in the KYSS-questionnaire and receiving the feedback report there is a clear view on the working points or the strengths. The next phase is to support the development of the soft skills. To create access to useful learning materials for students and teachers or coaches in higher education, there is focused on the design and construction of a Moodle-based learning environment. Therefore, Educational Design Research helped us to identify the successful elements for developing a learning environment. The participatory research and development activities that reinforce each other cyclically learned gave a better grasp on stakeholders' needs, resulting in more clear design guidelines and design priorities. Not only a learning environment with (inter) active methods for the students is necessary but also building awareness on the importance of soft skills, information about feedback literacy for students and coaches and coaching methods for the coaches has to be part of a successful learning environment.

It is good to realise that support materials for a particular person reach the level of awareness-raising, for another the level of stimulating the necessary personal growth, while other materials can help achieve more a change in behavior.

Although the developed tools ought to be user friendly; they are only effective if organisations work with these tools. And also, there are critical factors in organisations for the active use of the KYSS-tool and the online learning environment 'Boost your soft skills' to tighten the skills gap. First experiences learn that it is better to integrate and adapt the KYSS-tool and the learning environment 'Boost your soft skills' in an existing guidance programme on workplace learning and in the existing organisational culture around it, rather than just put workplace learning with these tools on top of it.

Further research is ongoing in three training courses in our institution who integrated KYSS and the learning environment to support the soft skills development. The central question for further research is: to what extent does KYSS and the learning environment support awareness, reflection and behavioral change in soft skills? (AP Hogeschool Antwerp, 2022).

## ACKNOWLEDGEMENTS

We wish to thank all participants in our research. Special thanks to Herman Van de Mosselaer who submitted the KYSS-project. The research and development of the tools are supported by a grant for practice-oriented scientific research from AP University of Applied Sciences and Arts, the European Social Fund and the Flemish Government

# REFERENCES


AP Hogeschool Antwerp. (2020). 360° Learning. Retrieved March 3, 2023, from https://www.ap.be/project/360deg-learning

AP Hogeschool Antwerp. (2021a). KYSS-groepsfeedbackrapport. Retrieved March 3, 2023, from https://kickstart.goleweb.be/sites/default/files/KYSS_groepsfeedbackrapport.pdf

AP Hogeschool Antwerp. (2021b). KYSS-individueel feedbackrapport. Retrieved March 3, 2023, from https://kickstart.goleweb.be/sites/default/files/KYSS_individueel%20feedbackrapport.pdf

AP Hogeschool Antwerp. (2021c). Over KYSS. Retrieved March 3, 2023, from https://www.deloitte.com/content/dam/assets-zone1/au/en/docs/services/economics/deloitte-au-economics-deakin-soft-skills-business-success-170517.pdf

AP Hogeschool Antwerp. (2022). Applied 360°. Retrieved March 3, 2023, from https://www.ap.be/project/applied-360deg

Chaoui, S., David, P., De Bruyne, E., Govaerts, S., Hoefkens, A., Van den Broeck, E., & Vanthournhout, G. (2022). Preparing for (future) work? Supporting soft skill development in the context of higher education with a digital instrument for 360° feedback. Paper presented at Edulearn congres 22, 14th International Conference on Education and New Learning Technologies; Palma, Spain.

Cinque, M. (2016). Lost in translation. Soft skills development in European countries. Tuning Journal for Higher Education, 3(2), 389-427.

Dall'Amico, E., Verona, S. (2015). Cross-country survey on soft skills mostly required by companies to medium/high skilled migrants. Methodological approach for a common framework of soft skills at work. Retrieved February 21, 2023, from https://ec.europa.eu/programmes/erasmus-plus/project-result-content/dce32717-6cfc-4b23-b7af-e4effad68f21/Framework_soft_skill_Report.pdf

De Bruyne, E., Van Den Broeck, E., Chaoui, S., & Govaerts, S. (2023). Designing a 360° learning environment for the development of soft skills. Conference paper presented at the 17th annual International Technology, Education and Development Conference, March 6-8, 2023, Valencia.

Deloitte Access Economics. (2017). Soft Skills for business success. Sydney: Deloitte Access Economics. Retrieved February 28, 2023, from file:///C:/Users/p063829/Downloads/deloitte-au-economics-deakin-soft-skills-business-success-170517.pdf

Deming, D. J. (2017). The growing importance of social skills in the labor market. Retrieved February 28, 2023, from https://scholar.harvard.edu/files/ddeming/files/deming_socialskills_aug16.pdf

Hoefkens, A. (2020). KYSS-model. Retrieved March 4, 2023, from https://kickstart.goleweb.be/sites/default/files/KYSS_soft%20skills.pdf

Hoefkens, A. (2021). Kickstart Your Soft Skills: user-centered design of a soft skills self-assessment tool for students. Paper presented at EAPRIL 2021 Conference, November 24-26, 2021, Digital Conference.

Hoefkens, A., & David, P. (2021). ESF - Eindrapportering Fase 1 - Kickstart Your Soft Skills. Unpublished report.

Hoefkens, A., David, P., & Vanthournout, G. (2021). Validering KYSS-vragenlijst Kickstart Your Soft Skills. Psychometrische kwaliteiten, beschrijvende statistieken en onderlinge samenhang. Unpublished paper.

Ibrahim, R., Boerhannoeddin, A., & Kayode, B. K. (2017). Organizational culture and development: Testing the structural path of factors affecting employees' work performance in an organization. Asia Pacific Management Review, 22, 104-111. Retrieved March 3, 2023, from https://www.sciencedirect.com/science/article/pii/S1029313215200772?via%3Dihub

MacDermott, C., & Ortiz, L. (2017). Beyond the business communication course: a historical perspective of the where, why and how of soft skills development and job readiness for business graduates. The IUP Journal of Soft Skills, 11(2), 7-24.

OECD. (2019). Skills for 2030. OECD Future of Education and Skills 2030 Concept Note. Retrieved February 21, 2023, from https://www.oecd.org/content/dam/oecd/en/about/projects/edu/education-2040/1-1-learning-compass/OECD_Learning_Compass_2030_Concept_Note_Series.pdf

Paterson, R. (2017). Because sometimes your failures can also teach you certain skills: Lecturer and student perceptions of employability skills at a transnational university. Qualitative Research in Education, 6(3), 241-275.

Sethi, R. (2016). Importance of soft skills for professional students. International Journal of Economics & Management, 1, 16-20.

Snape, P. (2017). Enduring learning: Integrating 21th-century soft skills through technology education. Design and technology education: An international journal, 22(3), 48-59.

Succi, C., & Canovi, M. (2020). Soft skills to enhance graduate employability: comparing students and employers' perceptions. Studies in Higher Education, 45(9), 1834–1847.

VDAB. (2021). Soft skills gevraagd! VDAB Ontcijfert. Retrieved February 26, 2023, from https://www.vdab.be/sites/default/files/media/files/ontcijfert2020nr42.pdf

World Economic Forum. (2015). New Vision for Education Unlocking the Potential of Technology. Geneva: World Economic Forum. Retrieved March 2, 2023, from http://www3.weforum.org/docs/WEFUSA_NewVisionforEducation_Report2015.pdf

Vandeweyer, M. (2016). Soft skills for the future. Retrieved March 3, 2023, from https://oecdskillsandwork.wordpress.com/2016/06/17/soft-skills-for-the-future/

Weyland-Ammeux, A. (Ed.) (2014). A cluster initiative: soft skills, training, enabling, progression & sustainability. Lille: Interreg IVA 2 Mers Seas Zeeën, 32p.

# PRACTICE

The following chapters can be found in this section:



Aliasghar Khavasi (Head of the master's program in Cloud-Based Software Engineering and Principal Lecturer in IT at Centria University of Applied Sciences) presents a detailed account of the StartIT mobility executed by the consortium. The StartIT mobility is a 10-day event designed to foster the development of viable and successful projects through the implementation of Agile/Scrum methodology and rapid prototyping. The program entails the formation of multidisciplinary and multicultural teams, appointment of project managers, daily stand-up meetings, continuous guidance and a final presentation. Rapid prototyping plays a crucial role in the project management process, involving the creation of functional models to assess feasibility and gather valuable feedback. The program's effectiveness hinges upon several key factors, including clearly defining the project scope, assembling cross-functional teams, selecting appropriate tools, embracing iterative improvements and rigorously testing and validating the prototypes. Khavasi concludes that the StartIT program offers a comprehensive and pragmatic approach to project management, harnessing the power of Agile/Scrum methodology and rapid prototyping to facilitate the development of feasible and successful projects within a condensed 10-day timeframe.



Katrin Dziergwa, Jan Wirsam and Katharina Simbeck (professors at the HTW Berlin - University of Applied Sciences), provide a detailed account of a hackathon event designed to cultivate essential skills among business students, including teamwork, problem-solving, communication and ICT skills. The event centres around tackling real-world business challenges using a no-code platform to develop prototype applications. The document outlines the pre-event preparations, the structure of the hackathon itself and the subsequent presentations and review sessions.

The authors' findings underscore the hackathon event as a highly rewarding and engaging activity for business students, enabling them to practice crucial skills while solving authentic business problems. By utilizing a no-code platform, all students can actively contribute to teamwork, regardless of their previous IT and spreadsheet experience. Moreover, the event format has proven successful in other educational institutions and has served as inspiration for subsequent student and business projects.

Overall, the description provided by these authors sheds light on how the hackathon event serves as an effective platform for business students to enhance their skills, address real-world challenges and foster collaborative innovation.



Katrin Dziergwa and Katharina Simbeck (professors at the HTW Berlin - University of Applied Sciences), along with Derek O'Reilly (Senior Lecturer at Dundalk Institute of Technology), detail the organization of the Erasmus+ project-based learning event, StartIT, in their guide. This event brings together students from various European universities to develop apps and business plans with a sustainability focus.

Key preparations include selecting international partners, securing financial support, and ensuring necessary infrastructure. The event structure features interdisciplinary team formation through integration tasks, daily check-ins, and multiple presentations for students to pitch and refine their projects. Academics mentor the teams, offering their expertise and support.

The guide emphasizes the importance of diverse and inclusive participation and provides best practices for successful execution, such as allowing sufficient teamwork time and organizing social events. An eight-day sample schedule is included to assist organizers in planning the event effectively.

- **ORGANIZATION OF AN LTTA UNDER A KA2 ERAMUS+ PROJECT .....89**

João Carlos da Rocha e Cunha Monteiro (Senior Lecturer and Head of the International Office at ISPGAYA) describes the organization of a Learning, Teaching, and Training Activity (LTTA) under an Erasmus+ KA2 project. This project, led by HTW Berlin and involving five other European institutions, aims to develop soft and digital skills in higher education students through active learning methodologies. The focus is on equipping students with essential skills like creativity, flexibility, and teamwork, crucial for the modern workplace. The first LTTA event took place in Vila Nova de Gaia, Portugal, where 50 students and 12 staff members collaborated to create mobile apps promoting sustainable tourism. The guide emphasizes careful planning, international collaboration, and the integration of innovative teaching methods to enhance the educational experience.

# PROJECT MANAGEMENT USING AGILE/SCRUM IN STARTIT

**Aliasghar Khavasi**
Centria University of Applied Sciences (FINLAND)

## 1 INTRODUCTION

The StartIT project adopts the Agile/Scrum framework for project management. The Agile/Scrum framework is a flexible, iterative approach to project management that is well-suited to fast-paced, rapidly changing projects such as StartIT.

One of the critical features of the Agile/Scrum framework is rapid prototyping. Rapid prototyping is quickly creating a simple, working version of the final product. This allows teams to test and validate their ideas quickly, making it easier to identify and resolve any issues early in the development process.

In StartIT, rapid prototyping is a critical component of the project management process. Teams are encouraged to create simple mock prototypes as soon as possible to validate their ideas and gather feedback from mentors, stakeholders and other team members.

The Agile/Scrum framework also requires teams to regularly review and assess their progress. This is done through daily stand-up meetings, where team members discuss their progress, identify obstacles and plan their next steps.

In addition, the Agile/Scrum framework also requires teams to hold regular sprint retrospectives, where they reflect on the previous sprint and identify areas for improvement. This helps teams to continuously improve their processes and work more efficiently.

By using the Agile/Scrum framework in StartIT, teams can rapidly prototype and test their ideas, identify and resolve issues quickly and continuously improve their processes and performance. This helps to ensure the success of the project and the development of high-performing, innovative teams.

## 2 BACKGROUND

Project management techniques are crucial for ensuring any project's success, especially in fast-paced and rapidly changing environments like technology startups. One of the most popular and practical approaches to project management is Agile/Scrum.

Agile/Scrum is a flexible, iterative approach to project management that prioritizes the rapid development of prototypes and continuous product feedback and improvement. This approach is particularly well-suited for short-term projects, such as those in the StartIT program, where teams work to validate their business ideas and build prototypes in a limited time.

By using Agile/Scrum, teams in the StartIT program can quickly build and test their ideas, receive feedback from mentors and stakeholders and make adjustments to their prototypes as needed. This helps to ensure that the team's effort is focused on the most promising ideas and that they are progressing towards their goals.

One of the critical components of Agile/Scrum is rapid prototyping. Teams work in sprints, each focusing on building a minimum viable product (MVP) and testing it with users or stakeholders. This approach allows teams to quickly validate their ideas and receive feedback, allowing them to pivot if necessary and adjust their strategy based on real-world data.

In the StartIT program, using Agile/Scrum helps ensure that the teams are continuously making progress and that their projects are on track. With regular sprints and continuous feedback, teams can quickly identify and address any issues that arise, allowing them to build a better product in less time.

By incorporating Agile/Scrum into the StartIT program, teams can work more efficiently and effectively, validate their ideas faster and ensure the success of their projects.

Rapid prototyping is a critical aspect of project management using the Agile/Scrum method in short-term projects like StartIT. It involves quickly creating a working model of a product or solution to test its feasibility and gather feedback. This allows teams to validate their ideas and make necessary changes before investing significant time and resources into the final product.

Several vital steps exist to consider when implementing rapid prototyping in a 10-day project like StartIT.

## 3 DEFINE THE SCOPE

The first step is to clearly define the prototype's content, including what features and functionality it should include. This will help ensure the team is focused on creating a minimal viable product that accurately reflects the desired end product.

Assemble the team: The next step is to assemble a cross-functional team with the skills and expertise necessary to create the prototype. This may include designers, developers, product managers and stakeholders from the business side.

Choose the tools: The team should choose the tools and technologies they will use to create the prototype. This may include wireframing, prototyping tools, project management and collaboration tools.

Iterate and improve: As the prototype is developed, it is important to iterate and make improvements based on feedback from stakeholders and end users. This helps to ensure that the prototype accurately reflects the desired end product and meets the target market's needs.

Test and validate: Once the prototype is complete, it should be tested and validated to ensure it meets the desired goals and objectives. This may involve user testing, focus groups and other feedback-gathering methods.

By following these steps and incorporating rapid prototyping into the project management process, teams can ensure that their ideas are feasible and that they are building products that meet the needs of their target market. This helps to increase the chances of success and reduces the risk of wasting time and resources on an idea that is not viable.

Project management plays a critical role in the success of the StartIT event. The Agile/Scrum method allows for a flexible and efficient approach to project management, particularly in a 10-day event. The following text provides an overview of how project management and team formation is implemented from the start to the end of StartIT.

## 4 TEAM FORMATION

The first step in project management for StartIT is the formation of teams. Teams are composed of multi-disciplinary and multicultural students who bring diverse skills and perspectives to the event. The units are typically formed of 4-5 students and are selected based on their backgrounds, skills and interests.

## 5 PROJECT MANAGER ASSIGNMENT

Once the teams have been formed, each group is assigned a project manager. The project manager is critical in leading the team and ensuring the project runs smoothly. They oversee the project, set goals and objectives and communicate with the mentors, stakeholders and other team members.

## 6 KICK-OFF MEETING

The next step is a kick-off meeting, where the project managers, teams and mentors come together to discuss the event and the projects that will be undertaken. The purpose of this meeting is to provide an overview of the event, set expectations for the teams and answer any questions the groups may have.

## 7 RAPID PROTOTYPING

One of the critical aspects of the StartIT event is rapid prototyping. The teams are encouraged to develop simple prototypes to quickly test their ideas and determine the feasibility of their projects. The prototypes are designed to be simple and iterative, allowing the teams to make changes and adjustments as needed quickly.

## 8 AGILE/SCRUM METHODOLOGY

The project management approach used in StartIT is the Agile/Scrum methodology. This approach is well-suited for short-term projects as it allows flexibility and adaptability, enabling the teams to respond quickly to changes and challenges. The Agile/Scrum methodology is based on iterative development, with the teams working in sprints to develop and refine their prototypes.

## 9 DAILY STAND-UP MEETINGS

The project managers and teams participate in daily stand-up meetings to discuss the project's progress, any challenges they are facing and what they plan to achieve in the coming days. These meetings allow the teams to stay on track and ensure everyone works towards the same goals.

## 10 CONTINUOUS GUIDANCE

The teams receive continuous guidance from their mentors and stakeholders throughout the event. The mentors provide support and feedback on the projects, helping the teams stay on track and progress. The stakeholders also play a vital role in the event, providing insight into the business and market landscape and supporting the teams in validating their ideas.

## 11 FINAL PRESENTATION

At the end of the event, the teams present their final prototypes to the mentors and stakeholders. This presentation allows the groups to showcase their projects, demonstrate their progress and receive feedback from the mentors and stakeholders.

## 12 CONCLUSION

The project management approach used in StartIT is designed to support the ideas' rapid prototyping and feasibility checking. The Agile/Scrum methodology, combined with the formation of teams, assignment of project managers, daily stand-up meetings, continuous guidance and final presentation, provides a comprehensive and practical approach to project management in a 10-day event.

# CASE STUDY: APP DEVELOPMENT HACKATHON FOR NON-IT STUDENTS

**Katrin Dziergwa, Jan Wirsam, Katharina Simbeck**
HTW Berlin – University of Applied Sciences (GERMANY)

## ABSTRACT

The hackathon is a two-day app development event for non-IT students using a no-code platform to create apps that solve real business cases. This chapter provides a blueprint to organize a hackathon event.

**Keywords:** Hackathon, ICT Skill, higher education

## 1 INTRODUCTION

This chapter presents a case study that uses a hackathon event in a higher education setting to give students practical experience in solving real-world problems by developing a functioning app in a team. The hackathon was conducted in a business program with limited exposure to coding. The app was developed on a no-code platform based on spreadsheets.

The described format was used over 10 times at the HTW Berlin (Hochschule für Technik und Wirtschaft) mostly in the undergraduate business administration (BWL) and also in the graduate program MISIM (Master Industrial Sales and Innovation Management).

There are about 1500 undergraduate students enrolled in the business seven-semester program. Students can choose between different areas of concentration and do a mandatory internship. The hackathon was part of the Innovation and Technology Management course which is a required course usually taken in the penultimate semester after the internship.

The following section of this chapter provides details about the Innovation and Technology Management course including. The next section provides a blueprint for the organization of a Hackathon including preparation, the event itself and the review of the event. This section also contains lessons learnt from conducting multiple hackathon-events. The chapter ends with a conclusion.

## 2 THE COURSE

The undergraduate business program is structured in two parts. During the first three semesters students take classes from different business disciplines and other subject areas such as mathematics and IT. In the fourth semesters students choose two areas of concentration such as finance or marketing. While some of the courses are elective, other courses are mandatory for all students in the program like the Innovation and Technology Management course. As part of this course the Hackathon was conducted as a two-day event. Student teams were given real-world problems from business partners. The teams developed app solutions for those problems in a two-day hackathon event. At a later time, the student teams presented the initial problem, the solution approach and their app to the group and the business representatives.

The objectives of the course include giving students a working knowledge of innovation processes and innovation management. The student will gain applied knowledge of project management in a development setting. They will do so by solving a real-world business problem. The course format allows the students to practice a number

of skills such as team work, problem solving, time management and communication. The teams will work together on solving the presented problems. They organize the roles in each team and divide responsibilities. There are frequently follow up questions to the company representatives giving the students opportunity to further practice their communications skills. As the project-idea is the development of an app, students also practice their ICT skills, however without the need to code.

# 3 THE HACKATHON

## 3.1 BEFORE THE EVENT: PREPARATIONS

Before the term starts there are a number of important preparations needed to host a hackathon in the presented format. One of the important prerequisites are businesses or other organizations with suitable business cases to be solved by students. Each team received one case though some business partners presented multiple problems. The faculty members need to contact potential organizations and inform them about the main idea of the event but also the limitations, e.g. there will be no fully working, coded app handed over at the end of the course, but a prototype can be expected. In a next step, the project partners collect ideas about problems that could be solved by an app. Some of these problems might be too extensive to be solved in an event of this format. Those can potentially be split and given to separate groups. The organizations also have to provide the information pertaining to processes and necessary data to students. If they do not want to share proprietary data, dummy data is an alternative to be considered.

There might also be legal and administrative requirements for a cooperation with organizations outside of academia. Each student will sign a letter, which allows the project partner the full use of the results, including the app and presentation.

Once the term starts the students form teams of four to six students and are matched to the business cases. The case owners will introduce the company and background information and present the case. It is important that students have sufficient information to solve the problems but also to understand other potential dependencies.

## 3.2 DURING THE EVENT: THE HACKATHON

The Hackathon event will be two days in which students, faculty and business case owners will meet up and work on the cases. In the past these events were held on campus on two consecutive days. One larger room was used as an assembly room and several smaller rooms were available for group work. The rooms need to be equipped with infrastructure for IT based teamwork. Useful are whiteboards and projectors or similar tools to develop and share ideas but also enough power outlets to be able to work with laptops. Students bring their own devices.

The assembly room is used for meetings and is used as the faculty room. As the events spanned two days there were snacks and drinks provided during the event and lunch on the second day. The set up also provided a chance for all involved to mingle and take a break.

As there are many classes scheduled throughout the week the hackathon was planned for Friday and Saturday. Most case owners were present on Fridays but not necessarily on Saturdays. This gives the students the opportunity to ask follow up questions and those frequently arise once the first proposed solutions are developed.

In the morning of the second day the students present their progress and can bring any challenges to the assembly. These presentations are usually short and limited to 5 minutes. Students and faculty provide feedback. The event concludes when the teams finish their apps.

## 3.3 AFTER THE EVENT: PRESENTATIONS AND REVIEW

A few weeks after the hackathon the class meets again with the business case owners. Each team presents the initial case and their solution including the app they developed.

Faculty members and case owners review the solutions and the event. A major part of the presentation is to show the app and its functionalities. Additionally cost/benefit analysis, lessons learned regarding project management, a roll-out plan to ensure a high adoption-rate and marketing issues are discussed. The review is an important part of the feedback loop for things like the scope of cases, structure, organization and communication. Bringing people from many different organizations, positions and with different schedules together is a challenge. The review helps to identify possible points for improvement but also important information that needs to be communicated to the parties involved.

The course Innovation and Technology Management is scheduled for the sixth semester in the bachelor's in business program. The bachelor thesis is in the seventh semester. The Hackathon has been an inspiration for follow up projects for students and also for businesses in the past.

## 3.4 SCHEDULE

Day one:
1. Kick off and welcome, team presentation
2. Introduction to the no-code platform
3. Important spreadsheet skills
4. Team meetings with case owners
5. App planning and development

Day two:
1. Team presentations and feedback
2. App development and formatting

1-2 weeks after the Hackathon students presented the cases and their solution including the app they developed.

## 3.5 CASE EXAMPLES

A company with different branches and regional managers wishes to provide mobile data analysis. In the app e.g. profit and loss (PnL) data can be presented by region, city and branch. The data can also be displayed on different aggregation levels. Drop down menus allow for easy navigation on the selection of aggregation criteria for instance location or segment. Depending on data availability and file size this could be down to the product level. Comparative information from a different branch/region or from a different reporting period can be added to the analysis. A dashboard visualizes the results.

Sales representatives visit existing and potential clients at their premises. The app on a mobile device supports the sales person to create an offer for the services or products offered. The app will generate an offer as a PDF file that can be sent to the client at the end of the meeting. Depending on the information required for the offer the app could also be made available on the website of the company so that customers can estimate cost based on individualized information without having to disclose pricing principles.

## 3.6 CHALLENGES

The group of students though all were in the business program was diverse in many aspects. Students studied in different areas of concentration in business and also had different practical backgrounds. Together with the diversity when entering the program students had varying experiences in IT and in the use of spreadsheets. Few students had more advanced prior practice with coding and spreadsheets. The use of the no-code platform

however enabled all students to contribute in various areas of the teamwork. Though no coding is necessary a basic understanding of data organization and processing is an advantage.

The cases were also from different areas in business so that the teams benefitted from the different areas of expertise. Some of the cases were quite complex. The cases might have to be split to accommodate the time limit of the hackathon format. Cases that are too simple or too complex can be a challenge to adjust for the use with students. Not all complex cases can be evenly split into separate cases.

Quite often students had follow-up questions after they first approach the cases. These questions might not be apparent without further analysis of the case. Thus, it is very helpful for students to have access to a representative at least during the first day of the Hackathon. During the interaction also, the case owners might adept their expectations as they gain a better understanding of what the teams can implement, also subject to the constrains of the used platform.

Companies and organizations might be hesitant to share confidential data with students. The apps can also be developed using dummy data that mimics the real data. Companies have to be aware how the data is used and stored so they can make an informed decision and if necessary prepare the dummy data.

The Hackathon event is very intense. Students work in teams on two consecutive days in addition to the regular coursework. The case owners have to designate and commit staff for the project and for the event day(s). The involved faculty not also function as advisors for projects but also take care or administrative tasks before and during the event. One of the challenges is to schedule two (or in some cases one) full day when all parties are available.

The app development process does not have happen in two days. An alternative structure is to only schedule the final presentations. Students and case owners can schedule meetings and calls based on their respective availabilities. Despite the disadvantages though the event was mentioned as a fun experience in students' feedback. It also gives an opportunity to work alongside one another and suffer setbacks but also celebrate successes together in the team.

## 3.7 LESSONS LEARNED

The Hackathon event has been done over 10 times in the past. There were two-day events and in some semester the app development was spread over the course of the semester. Despite the platform not requiring any coding experience it does help to have an advisor present who has experience using the platform and also with typical approaches to common requirements. The same is true for advisor for spreadsheets as the apps are based on spreadsheet functionality the possibilities increase with the experience in spreadsheet applications. There are common items in the apps developed by student teams such as drop-down menus, filters, diagrams and other elements depending on the platform used (e.g. map integration). As many teams will use these common elements it is useful to prepare instructions such as short videos and example files. This does not only include functionality but also questions of design such as using pictures and controlling visibility and accessibility of elements and data.

Some student teams start working on the problem right away. Providing paper or whiteboards encourages students to sketch the user interface of the app first and then adjust the spreadsheet to accommodate their choice. In the spirit of Kernighan & Plauger, 1978 "The Elements of Programming Style" number 39, one could say: "make it right before you make it pretty". Further, a better understanding of the business needs and an implementation strategy usually lead to better results.

Throughout the semester students were shown the no-code platform and had additional spreadsheet training. Students also had the opportunity to visit many of the case owners to gain a better understanding of their business model. It is beneficial to start this process before the hackathon event.

Another lesson learned was that it is beneficial to specify roles within the team. Each team was asked to nominate a project manager, a spreadsheet specialist, a controller considering cost/benefit analysis and a person in charge

of PR/marketing. Some groups have created short videos documenting their work and their app. The team organization was part of the preparation before the actual event.

If the school wants to use video and/or pictures the local legal requirements have to be considered and as needed release forms have to be prepared. If there are concerns other arrangements (e.g. picture-free room) have to be planned ahead of the event day.

## 4 CONCLUSIONS

The hackathon is a fun and engaging activity for many students. They can see the final product and so far, all teams have successfully solved the given problem. In the process students had an opportunity to practice important skills including teamwork, problem solving, communication as well as ICT skills. The format was also exported to other institutions. Despite the extra work required before and during the event from faculty it was a rewarding and exciting experience for the staff.

## REFERENCES

Kernighan, B. W., & Plauger, P. J. (1978). The elements of programming style (2nd ed.). McGraw-Hill.

# HOW TO STARTIT

**Katrin Dziergwa[1], Katharina Simbeck[1], Derek O'Reilly[2]**
[1]HTW Berlin – University of Applied Sciences (GERMANY)
[2]Dundalk Institute of Technology (IRELAND)

## 1 INTRODUCTION

StartIT is an Erasmus+ project funded by the European Union that brings students from six European universities together for an eight-day event where the 50-60 students work, learn and socialize together (Bollaert, et al., 2022). This chapter serves as a guide on how to set up a project and mobility that is like StartIT. The two mobilities so far have been rewarding for both students and Academics alike. The positive feedback received underlines the merit of the approach (Monteiro, et al., 2023).

Among the objectives of the project is to teach students soft and future skills, such as self-efficacy, teamwork, interdisciplinary and intercultural communication. The chosen approach in StartIT to achieve this objective is to use project-based learning (cf. (Chen & Yang, 2019) for an explanation of the principle and (Vogler, et al., 2018) for a case analysis of project-based learning). The students practice these skills by developing app prototypes and accompanying business plans to tackle problems that have been assigned to them. The original project chose sustainability as the theme. However, other themes are possible, given that a mobile app can be part of the solution.

This chapter will provide readers with the necessary information to plan a StartIT style event. It will give insight into the preparation (section 2), the event itself (section 3), lessons learnt in the original StartIT project (section 4), a sample schedule for a mobility with eight work days as a reference (section 5).

## 2 BEFORE THE MOBILITY

### 2.1 PARTNERS

To organize an event, partner organizations from different countries are needed. While it is possible to have multiple groups from the same country, one of the objectives of the StartIT project is for students to gain international experience and intercultural skills. Therefore, an international set of participants is needed. Each travelling partner college sends ten students and two academics to each mobility. Ideally, there should be a gender balance between the participants. Additionally, partner colleges should endeavor to ensure that their student selection process favours students from disadvantaged backgrounds. The host college might also include some local students in the project. Having a local student on each team can be very useful in helping the visiting students get around the workings of the host city.

While not strictly necessary, having an external NGO or business partner as a project owner is beneficial. The project owner will provide the background information about the problem to be solved to the students and will be part of the panel for the final presentation. Working on a real-world problem provides an interesting problem for students to work on, as opposed to their normal classroom-based assignments. Nevertheless, there is the possibility to use real-world problems without an outside project owner, giving the students broader challenges such as 'sustainable tourism'.

### 2.2 ACADEMICS

The participating academics act as mentors for the different teams but also provide support in specific areas of expertise. Typically, each academic can mentor one or two teams. The host-college's academics are not scheduled to mentor, as they are tied up with the organization of the event and related, unforeseen, challenges.

The academics who mentor teams and give the presentations are ideally also diverse in their background in terms of culture and expertise. Ideally, there is at least one expert in each of the following areas (one person can represent more than one area of expertise), prototype development, backend development, user interface development, and business planning.

## 2.3 ORGANIZATION

The first step is to agree on the timing of the event. While seeming trivial, this can prove to be very difficult, as many schools and countries have different semester or quarter schedules in which the event can take place. The partner hosting the event also needs to have the rooms etc. available at the time and the academics need to be free from other obligations at the time, such as teaching at their home university. Additional aspects to consider are registration and grading deadlines. The schools decide independently how and if the event is incorporated into the curriculum and if required, how the event is graded. It is also possible that some students must do additional work such as writing a report based on the project.

The next step is to plan how students are selected. There is often an established procedure in the different schools for this task. The selection might have to meet addition constrains, such as gender distribution due to accommodation requirements. Proficiency in the project language is another factor to take into consideration.

Some participating universities provide additional financial support for projects and events. This can be very helpful, as travel and accommodation are cost factors that can prevent students with challenging financial backgrounds from participating. Securing financial assistant is often time consuming and needs to be planned well ahead of time.

Once the students are selected, other aspects must be addressed as needed. This includes, but is not limited to, accessibility (special needs), visa requirements, and access to technology (e.g. loan laptops).

There are some advantages to organizing accommodation for all students in one location. However, group size and budget are constraints that do not always allow for this. If travel arrangements are centralized, they should be done well in advance.

If there are additional objectives for the mobilities, the team must prepare for those as well. During the second mobility in the original StartIT project, one additional objective was to try to measure the change in soft skills the students achieved during the ten-day period. The KYSS framework (Bruyne, van den Broeck, Chaoui, & Govaerts, 2023) was chosen to measure the level of a wide range of soft skills at the beginning at the end of the project. The questionnaires for the students were set up and prepared before the start of the mobility. While this seems trivial, it can be challenging as the students do not all have access to the same IT system. While the questionnaire was anonyms, the answers were paired by a number that students were randomly assigned. Based on the questionnaires the StartIT team found an improvement in some areas of soft skills during the project.

## 2.4 INFRASTRUCTURE

The students typically spend most of their time working on the project at the hosting organization. Therefore at least the following rooms must be available.:

- Assembly room: where all students and academics can comfortably fit. The room needs to have the infrastructure to make group presentations.
- Academics lounge: a room where academics can sit and work and where students can find academics.
- Work rooms: rooms spacious enough so that teams can work in the rooms and practice presenting. Ideally, each team will have its own room or at most two teams will share a room.
- Cafeteria: or another place where students and academics can eat and socialize.

Depending on the infrastructure in the rooms, additional extension cords, projectors, whiteboards, flip charts, or other supplies will be needed.

While a lot of universities participate in the Eduroam initiative, not all do. As guests might not be able to access the local wireless network, some local solution has to be set up. Local IT infrastructure can also be a challenge in communications. There should be one spot where information can be accessed that is open to all participants in the mobility. Some systems will allow for read-only guest access to solve this problem.

Given the number of students, special arrangements might have to be made for food and beverages. Dietary requirements for individuals who are vegan, vegetarian, etc., might have to be planned.

Procedures to ensure an inclusive environment, such as anti-discrimination policies and anonymous contact opportunities, need to be put in place. Students and academics should be informed about the supports that are available to them during the mobility.

# 3 DURING THE MOBILITY

## 3.1 GENERAL ORGANIZATION

Students should be aware of the work and general behavior that is expected of them during the mobility. Typically, there are two daily check-ins, one first thing in the morning and one immediately after lunch. The daily check-ins are used for administrative tasks, such as checking attendance (if required), information about the day's schedule and deliverables, and questionnaires. During the assembly on the first day of the project students also meet the academics and other students and all students and visiting academics are briefed on the local infrastructure and any other pertinent information.

## 3.2 TEAM SELECTION

When forming teams, the organizers should ensure that, as much as is possible, students from each college are placed in different teams. Teams should be interdisciplinary. Being interdisciplinary makes the teams more balanced and allows the teams to have the complementary competences that will be needed to successfully complete the project. Ideally, the students will select their own teams. This gives the team members ownership of their team, and it ensures that the students on a team will be motivated to work together during the project. All the teams should be equally sized, and each team should ideally have five or six members.

The afternoon of the first day is for students to meet each other and to form teams. Prior to the formation of the teams, the entire student group should spend two or three hours together doing integration tasks. Prior to doing the integration tasks, the students are told that the outcome of the integration tasks is to lead to the formation of multidisciplinary, inter-college teams. Knowing that the integration tasks have a purpose helps ensure that the students engage with the process.

To be successful, the tasks must involve all students speaking and all students spending time with each other. Initially, the students are broken into random groups that are of about 20 in size. The student groups compete in fun games, such as sorting the group by height, by age, and by forename. These games act as an ice breaker and help the students to feel part of a joint endeavour. The fun activities should last about 20 minutes. After this, the students are randomly placed into small groups of between ten and 15 students. The students are asked to remember as many other people's names as possible and one fun fact about each of the other students in the group. One or two academics will go around the groups, asking the students to speak about each other. This exercise encourages students to communicate and helps the students to form bonds. This exercise is repeated several times. For each iteration, students are instructed to join a new group that only contains students they have not been in a group with earlier. After three or four iterations, each student will start to become aware of various other students that they believe they can work with.

At this point, the students are asked to form teams that respect the rules of spreading students from each college across teams, having multidisciplinary teams, and keeping each team's size to five or six students. The same one or two academics who took part in the initial integration exercises will then probe each team to ensure that the team

meets the inter-college, multidisciplinary and team size criteria. The academics should ask each team to identify an initial app idea and initial roles for each student on the team. This encourages the team members to engage with each other and to identify each student's strengths that can contribute to the team achieving the project goal. Debating among themselves also helps the students to take shared ownership of their team, their app idea, and their individual roles.

During the project, academics take on the role of team mentor. Each group will have a mentor. The main role of the mentor is to keep their student team from veering too far off focus. Having mentors also helps to keep the teams motivated to achieve their project goals.

## 3.3 INPUT SESSIONS

The students will receive input on various topics in the first couple of days of the mobility. First, the project owner will present an overview of the problem at hand. More detailed information can be provided or researched by the teams. Due to the diverse, multi-disciplinary, academic backgrounds of the students on the project, three or four 30-minute presentations are used to introduce the various skill sets needed in the project. This helps all students understand the importance of the other students' disciplines. It is also used to communicate the project's multi-disciplinary expectations to the students. Depending on the background of the students, these topics could include "Teamwork and Project Management", "App development for non-techies", "Future Skills", and "Business Planning". During the presentations the students also learn about the areas of expertise of the academics. Typically questions about the different topics arise later during the mobility. It has proven useful to offer additional support sessions with the academics at later times during the mobility.

## 3.4 STUDENT DELIVERABLES

During the mobility all students take part in formal team presentations at least three times. Each student will actively present during each of the three presentations.

In the first presentation, each team pitches their idea. The presentation includes an introduction of the team members, the aspect of the overall problem they plan to tackle with their app, how this will improve the situation and a broad idea about the business aspect, such as source of income or funding for their project idea. Other teams and the academics will provide feedback. It is essential to ask questions and point out large inconsistencies, so that the project idea can be fine-tuned prior to any prototypes being developed. A late change in objective of the app will result in a lot of rework to be done. Mentors are assigned after the first presentations. This can be done randomly, based on the interest and expertise of the mentors, selected by the teams, or any other way.

After the presentation the teams meet their mentors and have time to rework their ideas. It is not uncommon for teams to completely change their idea or even switch to tackle a different aspect of the problem altogether. The teams' refined, final ideas are presented in the second presentation. The second presentation also includes more details on the app and more analysis of the target group (user stories), major source of income for the app, and the technical concept.

During the couple of days after the second presentation, the teams work on their apps and business plans with the support of their mentors and the input from the additional support sessions. The groups from the different universities give a short presentation about their home university, city, and country. This can encourage future student and academics exchanges.

The day before the final presentations there is a prototype fair in one of the larger rooms. This gives students and academics the opportunity to look at and test the other teams' prototypes.

On the final day the students give the final presentation of their projects. The (external) project owner should also attend this presentation. Students and academics are invited to give positive feedback relating to each teams' accomplishments. Additional activities can include bestowing awards for the best prototype or the best business

plan. An alternative approach is to provide students with play money that they can award to the other teams based on the merit of their projects.

## 4 BEST PRACTICE CHECKLIST

- Plan for enough time for students to work together, don't plan too many in-between presentations.
- Plan for enough time to practice presenting, tell students to practice.
- Strictly stick to presentation time.
- Plan two daily sign-ins. At all other times, work time and location can be flexible.
- Allow for one day off during the project.
- Plan social events on one or two evenings to encourage students to mingle and network.
- Plan social events for academics.
- Communicate expectations to students before they commit to the program. Inform them of the work they will they be expected to do and the behavior that is expected from them.
- Have students form teams of between five and six students. If possible, no two students in a team should be from the same school and each team should be multi-disciplinary.
- Give a lot of feedback in the first presentation ⇨ it is important to get the idea right.
- Include students from different majors in the program, part of the objective is for students to work in multi-disciplinary and diverse teams.
- Be mindful that, for some students, this might be the first time abroad.

# 5 SUGGESTED SCHEDULE

| | Time | Location | | |
|---|---|---|---|---|
| **Day 1** | Before start | Campus | | Check and Prepare the Location |
| | Morning | Campus | Room | Participant Sign-in |
| | Morning | Campus | Room | - Welcome<br>- External Input<br>- Task Explanation<br>- Ice Breakers |
| | Midday | Campus | Cafeteria | Lunch Break |
| | Afternoon | Campus | Room | Sign-in Participants |
| | Afternoon | Campus | Room | Input Sessions |
| | Afternoon | Campus | | Break |
| | Afternoon | Campus | Room | Team Formation |
| | Evening | | | Welcome Dinner |
| | Evening | Campus | | Clean-Up |
| **Day 2** | Before start | Campus | | Check and Prepare the Location |
| | Morning | Campus | Room | Participant Sign-in, Welcome |
| | Morning | Campus | | Teamwork |
| | Midday | Campus | Cafeteria | Lunch |
| | Afternoon | Campus | Room | Participant Sign-in |
| | Afternoon | Campus | Room | - 1st presentation<br>(3 slides max, idea, team, business plan)<br>- Mentor selection process |
| | Afternoon | Campus or elsewhere | | Teamwork |
| | Evening | Campus | | Clean-Up |
| **Day 3** | Before start | Campus | | Check and Prepare the Location |
| | Morning | Campus | Room | Participant Sign-in, Welcome |
| | Morning | Campus | | Teamwork with mentors |
| | Midday | Campus | Cafeteria | Lunch |
| | Afternoon | Campus | Room | Participant Sign-in |
| | Afternoon | Campus | Room | Optional: Additional Input Sessions |
| | Afternoon | Campus | | Teamwork and Voluntary Support Session |
| | Evening | Campus | | Clean-Up |

| | Time | Location | | |
|---|---|---|---|---|
| **Day 4** | Before start | Campus | | Check and Prepare the Location |
| | Morning | Campus | Room | Participant Sign-in, Welcome |
| | Morning | Campus | | Teamwork with mentors |
| | Midday | Campus | Cafeteria | Lunch |
| | Afternoon | Campus | Room | Participant Sign-in |
| | Afternoon | Campus | Room | Country Presentations (10 min each) |
| | Afternoon | Campus or elsewhere | | Teamwork |
| | Evening | Campus | | Clean-Up |
| **Day 5** | Before start | Campus | | Check and Prepare the Location |
| | Morning | Campus | Room | Participant Sign-in, Welcome |
| | Morning | Campus | Room | 2nd Presentation |
| | Midday | Campus | Cafeteria | Lunch |
| | Afternoon | Campus | Room | Participant Sign-in |
| | Afternoon | Campus | Room | Teamwork and Voluntary Support Session |
| | Evening | Campus | | Clean-Up |
| **Day 6** | Before start | Campus | | Check and Prepare the Location |
| | Morning | Campus | Room | Participant Sign-in, Welcome |
| | Morning | Campus | Room | Teamwork |
| | Midday | Campus | Cafeteria | Lunch |
| | Afternoon | Campus | Room | Participant Sign-in |
| | Afternoon | Campus or elsewhere | | Teamwork |
| | Afternoon | Campus | | Clean-Up |
| **Day 7** | Before start | Campus | Room | Check and Prepare the Location |
| | Morning | Campus | Room | Participant Sign-in, Welcome |
| | Morning | Campus | Room | Teamwork |
| | Midday | Campus | Cafeteria | Lunch |
| | Afternoon | Campus | Room | Participant Sign-in |
| | Afternoon | Campus | Room | Prototype Presentation |
| | Afternoon | Campus or elsewhere | | Teamwork |
| | Afternoon | Campus | | Clean-Up |

| | Time | Location | | |
|---|---|---|---|---|
| Day 8 | Before start | Campus | | Check and Prepare the Location |
| | Morning | Campus | Room | Participant Sign-in, Welcome |
| | Morning | Campus | Room | Fill in last surveys |
| | Morning | Campus | Room | Final Presentations |
| | Midday | Campus | Cafeteria | Lunch |
| | Afternoon | Campus | Room | Participant Sign-in |
| | Afternoon | Campus | Room | Final Presentations |
| | Afternoon | Campus | Room | Closing Ceremony, Deliver Certificates |
| | Evening | Campus | | Clean-Up |
| | Evening | Restaurant | | Farewell Dinner |

# REFERENCES

Bollaert, H., Hautamaki, J., Isohanni, J., Monteiro, J. C., Podlaski, K., Possemiers, P., Stawska, Z. (2022). START IT: Entrepreneurship and Digital Skills. In L. Gómez Chova, A. López Martínez, & I. Candel Torres. IATED.

Bruyne, E., van den Broeck, E., Chaoui, S., & Govaerts, S. (2023). Designing A 360° Learning Environment for the Development of Soft Skills. In L. Gómez Chova, A. López Martínez, & I. Candel Torres. IATED.

Chen, C.-H., & Yang, Y.-C. (2019). Revisiting the effects of project-based learning on students' academic achievement: A meta-analysis investigating moderators. Educational Research Review, 26, S. 71–81.

Monteiro, J. C., Bollaert, H., Dziergwa, K., Hautamaki, J., Khavasi, A., Podlaski, K., Stawska, Z. (2023). START IT: Mobility of Students as an Active Learning Method for the Promotion of Entrepreneurship and Digital Skills. In L. Gómez Chova, A. López Martínez, & I. Candel Torres. IATED.

Vogler, J. S., Thompson, P., Davis, D. W., Mayfield, B. E., Finley, P. M., & Yasseri, D. (2018). The hard work of soft skills: augmenting the project-based learning experience with interdisciplinary teamwork. Instructional Science, 46(3), S. 457–488.

# ORGANIZATION OF AN LTTA UNDER A KA2 ERAMUS+ PROJECT

**João Carlos da Rocha e Cunha Monteiro**
ISPGAYA (PORTUGAL)

## 1 INTRODUCTION / THE ERASMUS+ PROGRAM

The Erasmus+ program implemented by the European Union (EU) possesses, as a general objective, "to support, through lifelong learning, the educational, professional and personal development of people in education, training, youth and sport, in Europe and beyond thereby contributing to sustainable growth, quality jobs and social cohesion, to driving innovation and to strengthening European identity and active citizenship." (Erasmus+ program Guide 2024). It is a quite broad general objective that, precisely because of that fact, subdivides itself into smaller, more operational objectives. The specific objectives of the program are:

- "To promote learning mobility of individuals and groups, as well as cooperation, quality, inclusion and equity, excellence, creativity and innovation at the level of organizations and policies in the field of education and training."
- "To promote non-formal and informal learning mobility and active participation among young people, as well as cooperation, quality, inclusion, creativity and innovation at the level of organizations and policies in the field of youth."
- "To promote learning mobility of sport staff, as well as cooperation, quality, creativity and innovation at the level of sport organizations and sport policies."

These objectives must be put in place addressing a ser of priorities that are, naturally aligned with the priorities of the EU itself. The current priorities are:

- Inclusion and diversity: the program intend to promote equal opportunities and access to all, therefore guaranteeing diversity in its actions and a more balanced and equal society in the future.
- Digital transformation: the program intends to enhance the digital skills and competence development at all levels of society (therefore being connected to the previous one).
- Environment and fight against climate change: the program intend to provide knowledge to all about the current climate crisis and the adoption of sustainability practices, thus incorporating this aspect in the educational spectrum at all levels.
- Participation in democratic life, common values, and civic engagement: the program also intends to develop the knowledge of all about the EU itself, thus fostering the participation of its citizens in the democratic processes of the EU.

Additionally, other important features of the program should be highlighted. These features must be assured by those taking part in any aspect of the program. They are:

- Respect for EU values
- Protection, health, and safety of participants
- Multilingualism
- International dimension
- Recognition and validation of skills and qualifications
- Communicating projects and their results to maximize impact
- Erasmus+ open access requirements for educational materials
- Erasmus+ open access for research and data

All these features are related to the general objective of the program and to its specific objectives. The objective is that all actions/projects implemented under the Erasmus+ program guarantee the inclusion of these features in their activities/results. It is essential for its success and for its implementation.

To achieve the objectives defined, addressing the priorities established, the program sets some alternative policies/ key actions. The key actions established are the following:

- Key action 1: mobility of individuals
- Key action 2: cooperation among organizations and institutions
- Key action 3: support to policy development and cooperation

Key action 1 incorporates mobilities for learners and staff within Europe and even outside of Europe. Some additional recent possibilities were added but it remains, still, the most known action of the Erasmus+ program.

Key action 2 allows for the development/implementation of projects aligned with the specific objectives of the program. These projects are to be implemented by institutions, from different fields and different countries. Partnerships for cooperation, partnerships for excellence, partnerships for innovation, alliances for innovation, capacity building in different fields and not-for-profit European sport events are the types of projects than can be developed. Some of those projects, or type of projects, are essentially directed to the implementation of innovative practices or the development of new learning methodologies. They are, frequently tested and assessed in physical events, where learners and academic staff interact and experience new approaches to education.

Key action 3 is essentially devoted to the implementation of new educational policies or to the dissemination of the European values.

## 2 LEARNING, TEACHING AND TRAINING ACTIVITY (LTTA)

An LTTA can involve a variety of educational and training events.
The most relevant ones are:

- Workshops: interactive sessions focused on developing specific skills or knowledge areas.
- Seminars: educational meetings where participants get informed about subjects through presentations and discussions.
- Training courses: intensive programs aimed at enhancing professional skills or teaching methodologies.
- Job shadowing: an opportunity for teachers, staff, and educators to observe and learn from peers in their field by spending a period following a host organization or institution.
- Mobility: a physical activity that combines some of the previous mentioned activities with the objective of enriching the learning experience and to test new methodologies.
- Blended Mobility: Combining physical mobility with virtual activities to enrich the learning experience.

LTTA are designed for participants from various backgrounds, including students, teachers, trainers, and staff involved in education and training. These activities are structured to facilitate the exchange of practices, the development of innovative approaches in education, and the building of international networks among educational institutions. The primary objectives of an LTTA are to promote learning mobility, encourage the sharing of best practices, enhance the quality of education and training, and support the professional development of educators and staff. By participating in these activities, individuals and organizations can gain new insights, skills, and competencies that contribute to their personal growth and the improvement of their home institutions. A LTTA is a fundamental tool to test and assess the implementation of innovative practices or the development of new learning methodologies (Dowdall et al., 2021).

# 3 STARTIT

StartIT is a project developed by a consortium of six European Union (EU) Higher Education Institutions (HEI), led by HTW Berlin (Germany), together with AP Hogeschool Antwerpen (Belgium), Centria University of Applied Sciences (Finland), DKIT (Ireland), ISPGAYA (Portugal) and University of Łódź (Poland).

The project is financed by Erasmus+ under contract n. ° 2021-1-DE01-KA220-HED-000023215. The project main objective is to develop soft and digital skills in higher education students through an active learning methodology.

These future skills are extremely relevant for the future of young people, as they are skills that are widely considered as extremely relevant for employment (U.-D. Ehlers, 2021). In fact, the Organization for Economic Cooperation and Development refers that social and emotional skills are becoming as important as cognitive skills (OECD, 2019). Skills such as self-efficacy, self-organization, creativity, flexibility, empathy, responsibility, collaboration, or teamwork are becoming increasingly important. This is also a fact, because digital transformation is also changing, radically, the workplace and work relations. In this aspect, it is also widely accepted that the recent pandemic accelerated a scenario that was already under way. But, besides digital acceleration, increasing uncertainty in the workplace requires students to master not only specialized knowledge but also skills like curiosity, imagination, vision, resilience, self-confidence, and self-organization. Therefore, learning must provide youngsters with such skills, besides the technical skills associated with the specialized knowledge transmitted. As such, HEI should be able to provide their students with such skills to properly prepare them for a successful professional integration. The current problem is that existing curricula in HEI does not focus on these skills. This is essentially because of the need to address, primarily, the core technical competences of the given degree course. Therefore, new approaches might be helpful to solve the issue. Hence, innovative teaching methodologies, such as active learning, might be required to achieve the objective of fostering soft skills.

With this main objective in line, StartIT falls under key action two of the Erasmus+ program. Key action two projects are strategic partnership projects for the development of cooperation between HEI. It is required to align the main objective of each project to horizontal goals of the program. In StartIT, the main horizontal goal addressed is “Digital Transformation”. Additionally, the students will focus on the secondary goal topic of “Climate Change”. Finally, the sector priority that this project focuses on is “Innovative Learning and Teaching“. A significant part of these innovative learning and teaching aspects are associated with the mobilities integrated in the project. In the mobilities innovation is experimented, tested, evaluated, and reviewed. It is, therefore, an essential element of the project (Monteiro et al., 2022).

These mobilities place together students from the six consortium members to work in diverse, international, interdisciplinary teams. Students are properly supervised by academic staff, mentors, from the participating HEI. In the initial stage of the mobility, they take part in seminars, workshops, and integration activities. They are also presented with a problem, related to the territory where the mobility is taking place. Their objective is to come up with solutions to the problem they are confronted with. The solution should arrive as a mobile App, which, therefore, they must develop within the timeframe of the mobility. In addition to developing the app, they are also required to create a business plan that highlights the solution’s implementation potential.

The first mobility took place in September 2022, from the 15th of September until the 24th of September, in Vila Nova de Gaia, Portugal. It was organized by ISPGAYA. 50 students, 10 from each of the participating HEI (except the organizing institution, ISPGAYA), took part in this event. Besides students, 12 staff members from the participating HEI took part in the event as well. Other participating organizations were Vila Nova de Gaia’s city hall, with the collaboration of its tourism department and its environmental department, and INOVAGaia, a local Start UP incubator, essentially, for IT Start Up companies. Vila Nova de Gaia, neighboring city to better known Porto, faces a tremendous increase in tourism and tourism related activities. Therefore, the topic for the mobility was the promotion of sustainable tourism within the city. The challenge was to develop a mobile application that would promote sustainable practices in tourism related activities. In this event, students were grouped in 10 interdisciplinary and international teams. Each team would have to come up with a prototype of a mobile application and an associated business plan by the end of the 10 days. Progress would have to be reported in

two milestone presentations during the 10 days period. A final presentation of the application and associated business model was also organized in the last of the 10 working days. Within the project, two more mobilities will take place. The second one in Berlin and the third in Antwerp.

# 4 ORGANIZATION OF EVENTS

The organization of events, whether they are academic conferences, business meetings, workshops, or LTTA, requires thorough planning and attention to detail (INDEED editorial team, 2024). Essentially, the organization of any type of event should take into consideration a set of relevant aspects.

The most important ones are:

1. Define the Event's Purpose and Objectives
- Purpose: Understand and clearly define why you are organizing the event. This could be for networking, education, celebration, etc.
- Objectives: Set specific, measurable, achievable, relevant, and time-bound (SMART) objectives for what the event intends to accomplish.

2. Plan the Event
- Budget: Establish a budget that covers all potential expenses, including venue, catering, speakers, technology, and marketing.
- Venue Selection: Choose a location that aligns with your event's tone, size, and accessibility needs.
- Date and Time: Select a date and time that maximizes attendance. Consider potential conflicts with holidays or industry events.
- Schedule: Structure the event schedule for the participating persons.
- Speakers and Content: If your event includes speakers or presenters, select and confirm them early. Plan the content to ensure it meets your objectives.
- Technology Needs: Identify any technical requirements, such as audio-visual equipment, internet access, and specific software or apps.

3. Logistics and Operations
- Registration Process: Set up a registration system if required. This can be managed through event management software or platforms.
- Catering: Arrange for meals, refreshments, or snacks, considering dietary restrictions and preferences.
- Transportation and Accommodation: If necessary, arrange transportation for attendees and speakers. Provide accommodation options for those traveling from out of town.
- On-site Details: Plan the layout of the venue, including seating arrangements, registration tables, and any booths or exhibits.

4. Marketing and promotion (communication)
- Target Audience: Identify and understand your target audience to tailor your marketing strategies effectively.
- Promotional Plan: Use a mix of email marketing, social media, press releases, and networking to promote your event.
- Easy Registration: Ensure the registration process is straightforward and accessible.
- Communication: Keep attendees informed about event details, changes, and what they can expect.

5. Event Execution
- Team Briefing: Brief your team and volunteers on their roles and responsibilities.
- Checklist: Have a day-of-event checklist to ensure nothing is overlooked.
- Contingency Plans: Be prepared for unexpected issues, from technical glitches to last-minute cancellations.

6. Follow-up and Evaluation
- Thank You Notes: Send out thank you notes to attendees, speakers, sponsors, and anyone who helped make the event a success.

- Feedback: Collect feedback through surveys or informal conversations to understand what worked and what can be improved.
- Review Objectives: Assess whether the event met its original objectives and analyze the return on investment or other success metrics.
- Capture the Event: Use photography or videography to document the event for future promotion or as a resource for attendees.

The key to a successful event lies in detailed planning, effective communication, and the ability to adapt to challenges.

# 5 ORGANIZATION OF A LTTA

Organizing a LTTA under an Erasmus+ Key Action two project requires detailed planning and adherence to specific guidelines provided by the Erasmus+ program. Having as a reference the aspects associated with the organization of an event, the organization of a LTTA should observe the following aspects:

**Define the LTTA purpose and objectives:**

These two aspects are (or should be) clearly defined in the project. In fact, approval of the project requires each activity to be clearly specified. Therefore, at this initial stage of LTTA organization, it is only required to highlight what was mentioned in the project for each specific LTTA.

**Plan the LTTA:**

Budget: set at the start of the project. The issue with the organization is to guarantee that all planned activities are kept within budget. The Erasmus+ funding covers a significant part of the expenses associated with the LTTA, but additional funds might be required from the partners. Hotel selection for accommodation, meals and social events are, usually, the most relevant aspects.

Venue selection: while applying for the project, this information is partially required. The selected host organization is required to accommodate students and staff involved in the event. Lecture rooms, sufficient for the students' activities and for the staff meetings, auditoriums for the group sessions, etc.

Date and time / schedule: the start and end date as well as the schedule are essential elements for a successful mobility. The least they change, the better. They should be convenient for all those involved. The schedule must also adapt to the host organization own schedule (opening and closing hours, for example).

Speakers and content: the LTTA organized under StartIT contained an initial set of seminars/workshops. The objective would be to prepare and align students for the tasks they were expected to develop. Additionally, the problem to be tackled was presented at the beginning of the LTTA.

Technology needs: specific requirements interfere with the general organization of the LTTA. Nowadays, most (if not all) HEI are prepared to answer to all the technological needs.

**Logistics and operations (practical arrangements) of the LTTA:**

Registration process: in fact, for a LTTA the registration process, should be replaced by selection process, which is a responsibility of each participating HEI. It must happen before the LTTA.

Catering: essentially related to facilitate part of the meals of the day. Food restrictions are an obligatory aspect.

Accommodation and transport: suitable accommodation within the budget. Convenient transportation from the accommodation to the venue.

On-site details: availability to guarantee that all unexpected situations are dealt with. A team (or part of the team) should be available.

**Marketing and promotion (communication):**

Target audience: students, academic staff (both the ones that take part in the LTTA as well as other staff from the participating HEI), but also external partners.

Promotional plan: different means of promotion to be used, however, properly aligned with the promotional plan associated with the project.

Easy registration/certification of attendance: a compulsory aspect for proof of attendance.

Communication: use a tool to ensure that all attendees/participants are involved in the communication of the different aspects related to the LTTA. Separate channels might be used.

**Event Execution:**

Team Briefing: daily briefings are convenient. One including students and staff and another one including only staff.

Checklist: include daily aspects to be taken care off.

Contingency plans: as with any other activity, any organizational committee must be prepared for unexpected situations.

**Follow-up and Evaluation:**

Thank you notes: in a LTTA, the relevance should be attributed to certificates of participation.

Feedback/Evaluation: a proper evaluation of the mobility must be done. This is the procedure to assure the objectives set out for the LTTA were achieved.

Review objectives: if needed, objectives must be reviewed.

Capture the event: dissemination, visibility to the activities developed must be made.

Organizing an LTTA under a KA2 project is a comprehensive process that requires careful planning and coordination. By following these steps, you can ensure a successful and impactful learning experience for all participants. For specific guidelines and templates, always refer to the official Erasmus+ Programme Guide and consult with your National Agency.

# 6 CONCLUSIONS

The present chapter intended to present the basic aspects associated with the organization of a LTTA under an Erasmus+ KA2 project, using the LTTA implemented at StartIT as an example. However, to achieve that goal, a deeper knowledge of the program was needed. Additionally, an overview of the project that was used as an example was also required. Highlighting the fact that a LTTA is an event, a description of the basic aspects required for the organization of an event proved helpful. The organization of a LTTA should follow the same set of guidelines and principles.

## REFERENCES:


J.C. Monteiro, H. Bollaert, J. Hautamäki, J. Isohanni, K. Podlaski, P. Possemiers, D. O'Reilly, K. Simbeck, Z. Stawska (2022). StartIT: Entrepreneurship and Digital Skills. Proceedings from ICERI22 15th annual International Conference of Education, Research and Innovation, 7-9 November, 2022, Seville, Spain.

OECD. (2019). Skills for 2030. OECD Future of Education and Skills 2030 Concept Note. Retrieved February 21, 2023, from kills for 2030. OECD Future of Education and Skills 2030 Concept Note. Retrieved February 21, 2023, from https://www.oecd.org/content/dam/oecd/en/about/projects/edu/education-2040/concept-notes/Skills_for_2030_concept_note.pdf

U.-D. Ehlers (2021). Future Skills - Lernen der Zukunf - Hochschule der Zukunft. Wiesbaden, Springer.

S. Dowdall, A. Hlobaz, P. Milczarski, D. O'Reilly, K. Podlaski, Z. Stawska, "Multinational, Intercultural, Multidisciplinary and Intensive (MIMI) Methodology to Enrich Soft Skills Development in Computer Science Students", Informatics in Education, 20(3), 391-420, 2021.

Erasmus+ program Guide 2024,
https://erasmus-plus.ec.europa.eu/programme-guide/erasmusplus-programme-guide

https://www.indeed.com/career-advice/career-development/plan-event-10-steps

# START IT

## Development of Soft and Future Skills using Digital Entrepreneurship

The StartIT project is a cooperation partnership in higher education that aims to teach soft and future skills to students through project-based learning and international cooperation partnerships. The project involves six European higher education institutions and aims to improve students' abilities to work in a multicultural environment, work in interdisciplinary teams, communicate to a diversified audience, think creatively, empathize, reflect on their competencies and develop entrepreneurship skills. The project will have three mobility events, one focused on digital entrepreneurship and the environment, another on digital entrepreneurship and the climate and the last one on digital Entrepreneurship and the green city. The project involves cooperation partnerships in higher education, with tasks assigned to each partner. The project results, among which is this publication will be made available for open access.

The creation of these resources has been (partially) funded by the ERASMUS+ grant program of the European Union under grant no. 2021-1-DE01-KA220-HED-000023215.

Neither the European Commission nor the project's national funding agency DAAD are responsible for the content or liable for any losses or damage resulting of the use of these resources.

Centria. Reports, 6.
ISSN 2814-8924
ISBN 978-952-7173-98-5

Co-funded by the European Union