eWBL – Making work-based learning work in an online environment

Case Studies – Slovenia (WP1)

28/03/2023

Exploring the challenges met and the alternatives found by WBL providers across Europe in their shift from WBL to eWBL.

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CASE STUDY REPORT 4

Name of the case	Case study 4 – Slovenia
Organisation(s)	HE 4 & UK University
Country(-ies)	Slovenia
Disciplinary sector	Cognitive Science
Case written by	University of Ljubljana
UL is a member of the European University Alliance EUTOPIA. EUTOPIA is a teaching and research community of ten European universities established with the aim of actively building and transforming the European Higher Education Area. The main goal of EUTOPIA is to increase the number and type of mobility programmes and to develop and test new ways of international and cross-sectoral cooperation in teaching and research. This is a case implemented in cognitive science and is part of the pilot phase to further develop the educational model EUTOPIA, i.e. a learning community of 4 partner universities and associated partners from the surrounding community, in which students from EUTOPIA universities in the international environment jointly form an interdisciplinary work- and research-based learning community to explore the challenges of cognitive science phenomena. The WBL research was found to be quite challenging by the whole community when the activities were transferred online, but the interviewees found many similarities adapted in the digital world. This case involved some pedagogical and technological innovations as it took place over an extended period of time (nearly one-third of the spring semester for UL students). Many competences and skills were expanded for students, as one behaves differently in an international environment. The hybrid way to implement this version of research WBL would be optimal, especially for maintaining human contact, connecting with peers, and building a professional network.	

Section	**Answer**
1) Organisation's background	The Middle European interdisciplinary master programme in Cognitive Science (MEi:CogSci) brings together a variety of university partners and other institutions. University of Ljubljana, as one of the partners, offers the MEi:CogSci program as a joint cooperation of four faculties: Medical Faculty, Faculty of Computer and Information Science, Faculty of Education and Faculty of Arts. Coordination and administration are carried out by the Faculty of Education. MEi:CogSci is organized as a two-year 120 ECTS study programme. Lectures in the first year are held in Slovene, while lectures in the second year are held in English. A mentoring programme supports students in their individual reflections and choices, helping them focus and find their way through the curriculum towards their specialisation. All modules of the integrative kernel dedicate ECTS-credits to teamwork, where students discuss important concepts of cognitive science, ethical questions, social implications, as well as their problems, interests, research projects and future possibilities under tutorial supervision. In addition, tutors are available to students at all other times via email or special appointments when necessary. At different stages of the programme students engage in projects and teamwork, working in interdisciplinary and international environments (in the exchange semester). The MEi:CogSci curriculum is interdisciplinary and intercultural, therefore special care is given to the creation of an atmosphere of openness and mutual respect, hopefully contributing to the personal development of students and teachers involved. In the first year, students become familiar with theoretical concepts as well as research methods from the core disciplines of cognitive science and get accustomed to different scientific cultures. Moreover, students are introduced to current work of research groups and institutions in Ljubljana as well as the MEi:CogSci network. The introductory phase mainly takes place at the students' home institutions. Based on their research topic chosen individually,

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	students select one of the universities participating in the network in line with the areas of expertise of the respective partner universities. Mobility and research-based learning is planned for the third semester with the possibility of extending it to the fourth semester. Students have to do a research WBL project with a minimum of 10 ECTS which can be extended up to 20 ECTS. Special topics of interest are projects available at the UL and are changing from year to year depending on research projects currently in progress at various research institutions and the current focus of work of potential supervisors. Students are informed about possible projects before choosing their host university. This scheme enables students to take part in up-to-date research projects on hot topics each semester. The list of special topics of interest / projects is given in advance to the students. UL is a member of the European University alliance EUTOPIA. EUTOPIA is a teaching and research community of ten European universities, established with the aim of actively building and reshaping the European Higher Education Area. The main purpose of EUTOPIA is to increase the number and types of mobility programmes and to develop and test new ways of international and cross-sectoral cooperation in teaching and research. All ten partner universities endeavour to address local and global issues together, cooperating not only as individual institutions but as part of their local and regional environments. Cognitive science is a part of the pilot phase to further develop the EUTOPIA educational model, implementing a learning community of 4 partner universities and associated partners from the environment, where students from EUTOPIA universities in the international environment (with partnering universities and their associated partners, professors, students, tutors and working mentors) co-create an interdisciplinary work and research-based learning unit in the field of Cognitive Science. One of the main partners in the community, which is led by UL professors, is professor from the Behavioural Science Research Group and also the Director of Teaching and Learning at a UK University. She was a working and research-based learning mentor to students from UL in the period from April till May 2022 when the community research and work-based learning programme was implemented (100% on-line). All the EUTOPIA communities were originally planned to meet offline, but due to the Covid 19-situation it was decided that because of the uncertainty and different measures around the partnering universities (countries), this research WBL will remain only online. The University from the UK is regularly ranked within the top 10 UK universities and in the top 100 worldwide. The core purposes of research and education are underpinned by four strategic priorities: innovation, inclusion, regional leadership and internationalisation. The student is a Master student of Cognitive Science (1st year) and was involved in EUTOPIA community. The third of their spring semester was dedicated to the research WBL with UL faculty mentor and professors, a working mentor from UK and her project research group, and University from Sweden students and one faculty mentor. The whole process was implemented online.
2) Design, delivery and management	The WBL research was found to be quite challenging by the faculty supervisor as all activities were transmitted online. WBL in EUTOPIA was mandatory for UL students because of parallel sessions and research and WBL was conducted in separate project groups. Compared to offline WBL, many breaks were taken online because the curriculum and tasks (working in a lab, various experiments) were very demanding when conducted online. The faculty mentor stated

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	that although they thought about how challenging the online delivery could be, no negative assessment or feedback was given by students in this way. The staff was very well prepared and the IT equipment with various tools used in the cognitive sciences for experiments was performed to a satisfactory level by faculty assistants and technicians. Each student had to have their own computer because of the various online experiments. Organisation of online WBL with students and partners was done through team channels and chats, some Zoom communication and emails were used, but much less. The faculty mentor pointed out that in terms of preparing the staff (partners, mentors, tutors) of the community, it would be much easier to hold this part offline, i.e. meet in person for a few days and prepare everything in terms of management and organisation before going online with the students. The WBL mentor from the UK reported that the strategy where the work in EUTOPIA community, study programmes and WBL was done by the department heads and coordinated by the university management. In summer 2020, the work focused on how to organise, manage, and implement the online study process. Guidance was provided and goals were set for what should be made available to students to implement the plan and achieve consistency, with individual attention to academic style and freedom. Many different supports and individual packages were provided for students. The approach to quality assurance was similar offline: learning by doing, evaluating, and improving the process. The student was satisfied with the preparation; the guidelines were clear and working with students in a project group was good. The research WBL was quite intensive (experiments, challenges written in a daily diary and a final report). This EUTOPIA WBL was conducted 100% online, in English only.
3) Difference and similarities	The faculty mentor sees the difference in online management by making meetings and coordination much faster, more focused, and more efficient. Management was a little difficult in terms of the co-creation approach, where a face-to-face meeting would be easier compared to an online one. In terms of quality assurance, feedback from all stakeholders was evaluated after the WBL research project was completed. The main obstacle was the very intensive online learning and work with few breaks, and sometimes it was difficult to follow all the activities such as experiments, project group work, etc. The faculty mentor noted that the students' work was much better organised, and their results could be archived and accessed much more efficiently in digital form, since only the team's platform was used. In addition, the online sessions were much more focused this time, with students using tools to present their work, whereas the face-to-face sessions were just verbal discussion, without any material footprint. Equal access to the equipment is very important for the students, so they all have a high-quality WiFi or internet connection. The difference occurred in physiological experiments (measuring emotions, pressure, nerves), in this area it was a challenge compared to face-to-face discussions, as many mistakes can be made when using online tools. On the other hand, when conducting behavioural experiments, there were no major differences compared to offline experiments. There were no differences in evaluating and assessing work; students reported the same things they'd report offline. The only difference that was perceived as a benefit at the same time was conducting WBL research and some tasks in a group with other students (e.g., the WBL mentor from the UK conducted a

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	group task in which the participating UL students worked intensively with their counterparts in some sessions). For the WBL mentor, the online process was surprisingly similar, but required more passion and motivation to deliver (organisation, focus, timing is important). A positive difference noted was that more people (academics and students) were willing to explore more technology and improve their teaching and learning styles. The community was strengthened by sharing best practises and experiences and learning from each other. Assessment was done online, and the WBL mentor increased feedback contact hours through the team channel (a diary was set up). The student did well with the online delivery of the research WBL, but honestly prefers a face-to-face event, especially when the theory is delivered ex cathedra at the beginning of the WBL. At the same time, the schedule and deadlines were very strictly adhered to, and feedback from both mentors and tutors, as well as other peers, was provided in a timely manner to allow the research WBL to continue and move on to the next experiment. The assessment was the same as offline, the students didn't notice any difference.
4) Learning outcomes	Professional networking is not perceived as the main driver, but student feedback indicates that they are very excited to work and do research in a group with other students (mixed groups from EUTOPIA universities). The international experience is very valuable. They are first introduced to group work in a short training session where a facilitator (mentor from the field) gives them instructions and explains how to work in a group to avoid unnecessary obstacles that would interfere with their online work and collaborative learning. Transversal and soft skills were the same for them as offline, no differences were found here. The faculty mentor believes that during the assessment of this WBL, some of the students gained even more skills and competencies, especially in the areas of communication, public speaking, etc. During the online group session, the discipline with raising hands was a good approach, as well as the chat questions (the mentor noted that when conducting face-to-face, sometimes you forget who raised their hand, and you can easily miss one or two students, whereas in the online classroom, the toll allows you to see everyone who raised their hand). Also, there were many more questions asked in the sessions, including those that students sometimes felt were "the stupid ones." Disciplinary knowledge and professional skills are specific areas, as this research gives WBL students experience and insight into research work in cognitive science (various focused experiments, the majority of which are conducted in project groups) while exploring a variety of cognitive phenomena. In the opinion of the faculty mentor, the linkage to the programme of study is 100% because it is mandatory and very focused and directed toward the goal of students acquiring the appropriate skills for working and researching cognitive science phenomena. The faculty supervisor acknowledged that students are not informed and updated about the profile of the partner universities, the culture of the institution, the norms, the strategy, the tasks, etc. They are only briefly introduced as a group and told which research areas they come from. Even if they start working with an external mentor, the online rule is to skip this and start directly with the research problem. It would be different if the students from UL participate in the WBL mobility in the UK and work in person with the professor (WBL mentor) in the lab.

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	For the WBL mentor, the interpersonal skills of the student dropped tremendously, which was especially observed after two years of online work, but on the other hand, it was also easier for a mentor to work online when he had a project group. For the student, entering the digital world was positive from the perspective of networking in the international community. He notices a lot more transparency while doing WBL research online, and whatever you say gets noticed because you are very exposed online, especially when working in a project group. The student gained a lot of technological skills (using the tools in the discipline) but did not notice a lack of soft skills. The student was quite reluctant when the online world was introduced, but over time he has become accustomed to the system and has noticed some positive aspects.
5) Pedagogical innovations	The pedagogical innovations associated with this online WBL consisted of transferring experiments that could not previously be conducted outside of designated lab spaces with specialised equipment into the online world. In addition, many research quizzes were offered to replace the ex-cathedra approach of lecturers and work mentors, to break the routine and to motivate students. From the perspective of this internationally mixed project group, much peer-to-peer learning was practised by all three interviewees.
6) Technological innovations	All respondents learned about many technological innovations that have become part of their digital world and conducting experiments to explore cognitive phenomena with online tools was another innovation that would not be used or known if there were no pandemic. Many different approaches, new learning tools and apps (Jamboard, Miro, Slido, Mentimeter, Mural), including some protocols, have been implemented.
7) Drivers and barriers to eWBL	For the faculty mentor, the main obstacle is the online research WBL itself, it is quite exhausting and sometimes the motivation drops radically after two to three hours. On the other hand, faculty mentors could expose the main drivers, i.e., more students are willing to participate in the online sessions, more discussions are initiated by them, and more questions are asked (verbally or in writing in a chat). Moreover, this kind of internationalised community and project group research WBL is also a great motivating factor for student. Time management is also an advantage for the faculty mentor in implementing WBL online (especially coordination, management, organisation). Regarding online WBL, the faculty mentor would recommend that first, imperatively from his experience in transferring activities to the Internet, he checks and asks the students if they have the capacity and equipment to perform the tasks online. The faculty must guarantee and provide equal access to all. This is especially important if the same equipment is available to all in the classroom on faculty premises or in the company/lab. Ex-cathedra lectures should be adapted when used online, new learning and research tools, techniques, co-creation approaches and methodologies in the discipline should be constantly explored by academia and the WBL environment to engage students in online WBL. It is also very important to go in the same direction and develop only one platform rather than using several different tools (Google Teams, Zoom, internal shares, etc.). On the other hand, the WBL mentor would say to be organised, focused and clear about the goals when delivering research eWBL. For the EUTOPIA WBL mentor, the main drivers were the continuation of political education for students (the university in the UK was under tremendous pressure from the press) and provide as collaborator and main partner in this EUTOPA community.

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	For the student, the barrier in terms of socialisation is seen. If he would be part of the international community in the UK, in reality, and saw mentors, tutors, and other students live, the socialisation aspect (lunch, drinks, networking) would be different and much more intensive he can imagine.
8) Long-term impacts of eWBL	For the faculty mentor, the transition to the online world is a reality and a future, especially with climate change and the lower mobility approach, i.e., some world conferences will no longer be held in person but will be held online, allowing equal access for researchers and students who could not attend (underfunded centres and companies compared to those with financial resources). For students, the hybrid pathway would be optimal for maintaining human contact, connecting with peers, and building a professional network (esp. in WBL environment, etc.). Contact hours with mentors for coordination and management can remain online, while some experiments to explore cognitive phenomena cannot be conducted online only. Many online tools were developed in the disciplines and will remain there, so the long-term impact of eWBL will also be to learn about new horizons that were not previously used or did not exist. A lot of training and workshops were suddenly available to give you insights into your area of expertise, how to do things online. For the working mentor, online research opens up WBL to new opportunities, more collaborations, and engaging the technology and global community and recognising what we can accomplish. It doubles their variety of new learning tools that were not available or used before.

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