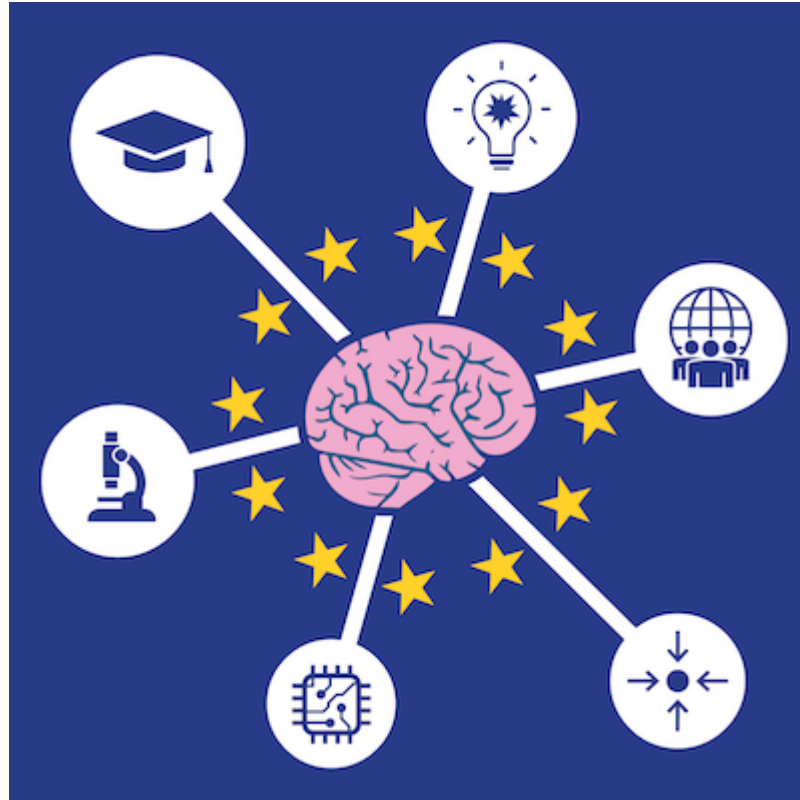


Neurotech^{EU}

The European University of Brain and Technology



D4.3

Catalogue of life-long learning programmes and its integration into
CAMPUS+

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1. Introduction

1.1. Purpose

The purpose of this document is to describe the development of lifelong learning in the NeurotechEU alliance, the creation of the NeurotechEU *Lifelong Learning Centre (L3C)*, the resulting course catalogue and its integration into the digital infrastructure of NeurotechEU.

1.2. Development of the NeurotechEU L3C

In several virtual workshop, stakeholders from all NeurotechEU partners discussed the following questions:

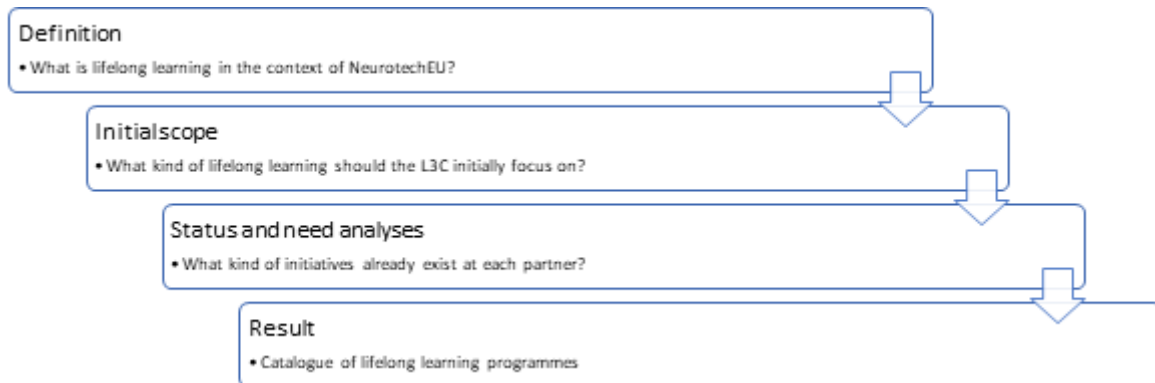


Figure 1: Steps taken and questions discussed in order to set up the Neurotech L3C.

2. Background

There are many definitions of what lifelong learning represents, depending on the general context and the specific point of view of educators and target groups. Also, legal definitions and financial constraints vary between countries and institutions. Therefore, we face a considerable heterogeneity of approaches towards lifelong learning across NeurotechEU partners. We decided that the first step in the development of the L3C is to find a common ground and a joint definition to efficiently set up the L3C and to compile the catalogue.

2.1. General considerations

In its widest sense, lifelong learning is the continued training of society at large starting from young pupils and throughout adult life. Its aim is to provide the necessary knowledge, skill sets, and competencies for individuals to successfully face and master the changing personal, civic, societal and employment related needs. In the context of NeurotechEU, it could provide opportunities to professionals in the fields of brain research and brain-related technologies. Another goal of lifelong learning can be to develop public engagement and to counter inequalities (e.g. due to past educational background and lack of inclusive higher education) and to attract new talent.

For setting up the NeurotechEU L3C, this very broad concept needs to be adapted to our purposes and existing definitions at each partner. A definition can be structured along to the following aspects and dimensions: 1) target group of learners, 2) motivation of and desired outcome for the learners, 3) content of the courses, 4) temporal structure of the courses, 5) pedagogical concept and teaching mode of the courses, 6) certification, accreditation, and quality assurance of the courses, 7) contributing educators, 8) funding, 9) organisational and legal framework.

For example, the following possible target groups were identified by different partners: children and young adults, pupils preparing for university enrolment, young adults outside schools and universities, professionals in industry and health care, administrative staff and researchers at universities, graduates with university degrees and alumni of universities, senior citizens, science journalists, patient



organisations, and the interested general public. The discussed motivations and outcomes for these different target groups can be classified into two main categories: professional development and personal interest. For instance, learners motivated by personal interest focus on the curiosity-driven exploration of new topics. In contrast, pupils preparing for a degree programme, academics obtaining and updating their skill set, and medical staff fulfilling their legally required continued education would do this for their professional development as does any professional who educate themselves on novel concepts and methods outside their specialities. Because of this diversity, courses in lifelong learning in the context of brain science and brain-related technologies cover a wide range of content in order to equip learners with transversal skills and knowledge (e.g. statistics, presentation, project management, leadership, work ethics), with neuroscience-related skills (e.g., translational research, neurotechnologies), and with introduction to emerging concepts and discoveries in brain-related research (e.g. brain diseases, microscopy in the 21st century, neurobiological concepts in artificial intelligence).

It is clear that such content varies considerably in its volume. At the same time, the target groups have very different temporal flexibility and constraints. As a consequence, lifelong learning course can be implemented as anything between a two-year full time master programme and a single evening lecture. The pedagogical concepts (e.g. online vs. in person, lectures vs hands-on lab course, mixed workshops and seminars) also need to be adapted according to content and target group and their temporal constraints. The same is true for the type of certification that successful participants receive (e.g. none, confirmation of participation, degree certificate of a university, micro-credentials, accredited certification according to legal requirements of health professionals).

Implementation of lifelong learning depends further on the legal framework, societal needs, and local traditions. For example, university lecturers might be required or allowed to teach in lifelong learning courses offered at their institution or in contrast, they may be prohibited from contributing during their official working hours. Alternatively, lifelong learning courses might rely on external expertise and trainers (e.g. private local businesses and large corporations such as LinkedIn and Google). Administrative constraints at each partner are often directly related to the funding structure of lifelong learning in each partner's country that sees lifelong learning as either in- or outside the mission of higher education institution and therefore allow or prohibit using university's funds for such activities. Similarly, the admission systems and procedures vary widely (e.g. no registration and free participation vs. official nationwide application and enrolment system and paid-for content).

In summary, the individual approaches to lifelong learning vary widely. In order to develop a joint specification of the NeurotechEU L3C regarding these aspects, a more detailed look at the definition and current implementation of lifelong learning at each partner is necessary.

2.2. Definition and current implementation at each partner

2.2.1. RU

Radboud Academy is the umbrella organisation for Lifelong Development (LLO) at Radboud University. Together with the faculties at Radboud University, it develops and opens up a wide range of advanced education - varying in subject, form, duration and price - for people with higher education who want to continue developing both professionally and personally. In order to keep up with the ever changing and complex nature of society and to make meaningful contributions to themselves, their organisations and the world at large. With its science-based and meaningful postgraduate education, Radboud Academy is the university partner in the region. As such, it connects local social partners' challenges with insights from education and research at Radboud University. For example, in our Young Professional Programme for young starting employees in government organizations.

Lifelong learning in the Netherlands looks like the same in Germany; *'The main task of Dutch universities is to provide teaching for the acquisition of primary study programme degrees. The current rules for spending university funding are shaped according to that, which complicates the implementation of structured lifelong learning programmes.'* Additionally, lifelong learning programmes have to be funded via the private sector and exist independently.





2.2.2. KI

There is no common definition of lifelong learning in Sweden or at KI. However, currently this would mainly be translated into “contract education” and free-standing courses offered by the KI. Contract education within higher education institutions in Sweden is regulated by law; [Ordinance on contract education at higher education institutions \(2002:760\) - Swedish Council for Higher Education \(uhr.se\)](#). At KI the office for Executive and professional education coordinates all contract education. In short, executive and professional education accommodates the needs for competence development within an organisation, and there needs to be full cost coverage. Courses can only be commissioned and paid for by a legal entity, a company, organisation or the equivalent (not individuals). Courses can be offered as open enrolment or tailor-made, online or onsite (or blended), in Swedish or English. Most are offered part-time but vary in length from shorter seminars to longer master programs, the majority will give ECTS. There is a large range of courses mainly targeting the healthcare sector. Free-standing courses are financed by the government and open for anyone to apply to via the national university admissions system.

2.2.3. UBO

The main task of German universities is to provide teaching for the acquisition of degrees of primary study programmes (e.g. BSc., MSc.). The current rules for spending university funding are shaped according to that, which complicates the implementation of structured lifelong learning programmes. In the context of professional development, UBO currently offers several special and fee-based “Master degree programmes for continued education” (Weiterbildungsmaster) for professionals with the legal requirement of continued education. In addition, there are specific offers such as free lecture series for the general public. Anyone interested in attending regular courses can register as an “Auditor” (Gasthörer, 100 € per term) and obtain a confirmation of attendance but not a degree. Furthermore, there are numerous programmes focussing of human resource development for students and employees of UBO.

2.2.4. BOUN

Boğaziçi University Lifelong Learning Center (BULLC), which was established by the consent of Higher Education Council (YOK), is responsible for developing, directing, and coordinating dedicated training programs which are open to everybody and are apart from the undergraduate and postgraduate degree programs offered by BOUN. These programs are prepared and presented to the public by the faculty members of the university and are brought into life with the coordination of BULLC. There are basically two types. The first type of programs is offered to the public and interested people from different sectors and companies can enrol to these programs. The second type of programs are institution-based ones that are tailor-made specifically for the target organizations. All offered programs are organized according to the academic regulations approved by the University Senate and put into practice according to the official regulations approved by the University Executive Board.

2.2.5. UD

The University of Debrecen (UD) is Hungary's leading higher education institution and the largest scientific workshop in the region. The university is convinced that centuries of experience in education and research can only be truly useful if it is accessible to all. This is why it has launched the Senior University programme as part of the so-called Third Mission. The programme is aimed at people with at least a secondary education who would like to improve their knowledge of the current achievements and interests of science, technology and the arts. The free course, not leading to a university degree, lasts 2 semesters. At the end of the course, students will receive a certificate, which is subject to registration and attendance. The training programme includes 6-6 interesting lectures in both the autumn and spring semesters. The programme is supported by the Széchenyi 2020 fund (**EFOP-3.4.3-16-2016-00021**)





2.3. Joint definition of lifelong learning and initial scope of the NeurotechEU L3C

Based on the definitions and considerations outlined above, the common ground is that the target group of lifelong learning of the NeurotechEU L3C includes society at large with the exception of students in primary degree programmes, in particular bachelor's and master's degrees. Furthermore, in order to differentiate lifelong learning activities from public outreach activities of NeurotechEU, the main motivation of participants is to obtain new knowledge and skills for their professional or personal development. No further limitation with respect to the content and structure of the courses will be made to reflect the heterogeneity of both the partners and the needs of the learners.

However, the NeurotechEU L3C will initially concentrate on professional development, which will happen along two main categories: 1) transversal skills and 2) education on brain sciences and brain-related technologies. These categories emerged as a natural starting point for building the L3C before expanding in the future. They also enable us to categorise and combine existing content. The latter allows the partners to complement their individual offers with content from the alliance. Thereby, we achieve a greater coverage of the various aspects of lifelong learning than is possible individually.

3. Catalogue of NeurotechEU L3C

The Catalogue of life-long learning programmes in NeurotechEU is publicly accessible via: **XXX**.

3.1. Existing programmes

3.1.1. RU

Bachelor Artificial Intelligence	https://www.ru.nl/en/education/bachelors/artificial-intelligence
Bachelor Molecular Life Science	https://www.ru.nl/en/education/bachelors/molecular-life-sciences
Master's programme in Cognitive Computing	https://www.ru.nl/en/education/masters/cognitive-computing
Research Master's programme in Cognitive Neuroscience	https://www.ru.nl/en/education/masters/cognitive-neuroscience-research
Master's programme in Intelligent Technology	https://www.ru.nl/en/education/masters/intelligent-technology
Master's programme in Neurobiology	https://www.ru.nl/en/education/masters/neurobiology
Master's programme in Neurophysics	https://www.ru.nl/en/education/masters/neurophysics
A programme to teach Neuroscience in schools	OCEANA – A project by Cogni'Junior
A network to connect Science, Technology and the Human Condition	https://www.convergensciencenetwork.org/
A library of podcasts (>200 titles)	Convergent Science Network Podcast (csnetwork.eu)
A library of video lectures (6 titles)	Convergent Science Network - YouTube





3.1.2. KI

Education on brain sciences and brain-related technologies	
Master's courses in dementia care for physicians	https://education.ki.se/masters-courses-in-dementia-care-for-physicians-60-credits-0
Master's courses in dementia care for occupational and physiotherapists	https://education.ki.se/masters-courses-in-dementia-care-for-occupational-therapists-and-physiotherapists-60-credits
Dementia from cell to society	https://education.ki.se/patients-with-dementia-course-for-dentists-dental-hygienists-speech-language-pathologists-and
Introduction to Brain Imaging in Neuroscience: With a Focus on MRI, PET, EEG and MEG Methods	https://education.ki.se/course/2QA313/22-23

3.1.3. UBO

Transversal skills	
UBO human resource development web portal (e.g. inventory of dedicated workshops)	Human Resource Development
UBO Argelander Program (e.g. support for early career researcher)	Argelander Program
Bonn International Graduate Schools (BIGS, e.g. soft skills courses for early career researchers)	BIGS
UBO Medical Faculty Transfer Office (e.g. sessions and lectures on innovations and entrepreneurship)	Technology Transfer at the Medical Faculty
Education on brain sciences and brain-related technologies	
UBO web portal, Studium Universale and Auditor programme	Lifelong Learning University
BIGS Neuroscience (web portal, curriculum and courses, contact)	BIGS Neuroscience
BIGS Clinical and Population Science (web portal, curriculum and courses, contact)	BIGS Clinical and Population Science

3.1.4. BOUN

Transversal skills	
Philosophy for Children (P4C)	https://buyem.boun.edu.tr/egitim/cocuklar-icin-felsefe-egitmen-egitimi.html
Data Science and Applications with Python	https://buyem.boun.edu.tr/egitim/python-ile-veri-bilimi-ve-uygulamaları.html
Corporate Sustainability	https://buyem.boun.edu.tr/egitim/kurumsal-surdurulebilirlik-egitim-programi.html
Sustainability Strategy	https://buyem.boun.edu.tr/egitim/yoneticiler-icin-surdurulebilirlik-stratejisi-programi.html
Leadership Academy of Business	https://buyem.boun.edu.tr/egitim/leadership-academy-of-business.html
Human Resources Program	https://buyem.boun.edu.tr/egitim/insan-kaynaklari-programi.html





Applied Financial Management	https://buyem.boun.edu.tr/egitim/uygulamali-finansal-yonetim.html
Digital Marketing Communication	https://buyem.boun.edu.tr/egitim/dijital-pazarlama-iletisimi-sertifika-programi.html
Sustainable Brand Management	https://buyem.boun.edu.tr/egitim/surdurulebilir-marka-yonetimi.html
Education on brain sciences and brain-related technologies	
Data-Based Decision-Making and Modeling Certificate Program	https://buyem.boun.edu.tr/egitim/veriye-dayali-karar-verme-ve-modelleme-sertifika-programi.html

3.1.5. UD

Transversal skills	
A library of videos on clinical conditions and procedures by the Clinical Center of UD	https://www.youtube.com/@dekliniikaikozpont/videos

3.2. New programmes

During the current initial set-up phase, we will make existing content available and accessible for the envisioned target groups. In this pilot phase, we will monitor usage of existing content and identify particularly frequently requested content. Based on this experience, we will define which content for which target groups will need to be developed in the future.

There are new running or upcoming programmes:

Transversal skills	
Best practices in doctoral supervision	Spring 2023, see 3.2.1, organized by KI
Education on brain sciences and brain-related technologies	
BOUN R&D School	LLL program tailored specifically to the needs of translational research. Program content planned: R&D Based tests/analyses, Scaling, Product Development, Patenting, IP Management, Legal Procedures, Quality Management, Finance, Marketing, Entrepreneurship.

In addition, we will integrate suitable external content into the L3C. One example is the EUIPO (European Union Intellectual Property Office) Academy Learning Portal (<https://euiipo.europa.eu/knowledge/>).



3.2.1. Best practices in doctoral supervision (KI)

The following seminar series organized by Prof. Bob Harris and colleagues at Karolinska Institutet (KI) is scheduled for spring 2023. Its target audience are especially junior principal investigators and other personnel at the partners, who are starting to supervise doctoral students or want to reflect on best practices for doctoral student supervision.



The European University of Brain and Technology - NeurotechEU

BEST PRACTICES IN DOCTORAL SUPERVISION

Professional development for doctoral supervisors

Content:

The professional training of supervisors is considered a requirement for successful doctoral education. Neurotech partners are offered the possibility for their current and future PhD supervisors to interact with a panel of experts for a series of short training sessions. Different aspects of the supervision of doctoral students will be addressed in interactive online sessions on a weekly basis.

The objective of this training program is to support and inspire PhD supervisors in the development of teaching and leadership skills, and in promoting the use of best practices in the development of their PhD students.

All faculty members currently supervising PhD students or that aim to become supervisors are welcome to participate. Sessions will be held online, in English, and you can participate in as many sessions as you like.

Learning Outcomes:

At the end of the programme the participant will:

- have understood how their role as a PhD supervisor develops over time.
- understand the responsibilities of a PhD supervisor both legally, practically and morally.
- have learnt best practices regarding ethics, conflict prevention, feedback and communication as a PhD supervisor.

Responsible Trainer:

[Prof Bob Harris](#), Karolinska Institutet

Date and Time :

Wednesday 12.30-13.30 CET



Co-funded by the
Erasmus+ Programme
of the European Union





Total workload (8 hours):

Single 1-hour subject sessions as follows:

1. 22 February 2023: The process of doctoral education – a supervisor's perspective (Bob Harris)
2. 1 March 2023: Professional responsibility as a supervisor (Bob Harris)
3. 8 March 2023: Outcome-based doctoral education (Bob Harris)
4. 15 March 2023: Why hamburgers are bad for you – the giving and receiving of feedback (Bob Harris)
5. 22 March 2023: Research ethics (Ana Borovecki)
6. 29 March 2023: Conflict prevention and management (Bob Harris)
7. 5 April 2023: Supervision and communication across cultures (2 hours) (Juha Nieminen) (Note new Zoom link: <https://ki-se.zoom.us/j/67481602405>)

Location:

Online: <https://ki-se.zoom.us/j/62673924705>

Target Audience:

Academic staff of NeurotechEU universities and associated partners.

Cost & Registration:

No fees. No registration required.

Certificate:

Confirmation of attendance (only for attendees of all sessions) on request.

Website:

For more information on NeurotechEU visit <https://theneurotech.eu/>

