



SKILL — TRACK

RECOMMENDATIONS
2023

Erasmus+ project

“Skills Tracking System as a Digital Solution for Student-Centred Learning (SkillTrack)”

2021-1-LV01-KA220-HED-000023077



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ABOUT THE PROJECT

In digitally oriented pedagogical development processes, the question raises what value a student-centred learning approach can add to higher education teaching and learning contexts in a digital world where working life, competencies and skills needed in the future is changing very fast?

SkillTrack project aims to integrate the understanding of self-directed learning, digital learning environments and skills tracking system in higher education to promote student's learning experience, by bringing together partner universities from 4 different countries – Rīga Stradiņš University (Latvia), Arcada University of Applied Sciences (Finland), The Protestant University of Applied Sciences in Ludwigsburg (Germany), and Baskent University (Turkey).

SkillTrack project team has develop a concept of a pedagogical framework and methodology in the context of self-directed learning, using a skills tracking system as a tool, to promote evidence-based discussion between public and educational institutions, and employers and to facilitate dialogue to align learning outcomes with the needs of the labour market to reduce skills mismatch.

KEY COMPONENTS

This project was initiated to address the evolving needs of higher education institutions and their stakeholders, including students, educators, and public institutions. The central focus of the project was to enhance the quality of education and skill development by promoting self-directed learning while also introducing a comprehensive skill tracking system. The project aimed to bridge the gap between theoretical knowledge and practical skills, aligning higher education more closely with healthcare sector demands. The development and implementation of the project was made by several key components.

Pedagogical Framework of Self-directed Learning

Pedagogical framework of self-directed learning was developed to ensure the quality of education within the context of self-directed learning, including definitions, methods and documentation. The scope of the framework was to analyse and combine pedagogical methods, which have potentially high effect regarding educational results, skills assessment approaches to ensure objective and supportive assessment to facilitate students' self-directed learning.

Developed framework fosters academic staff competence to guide and lead students to achieve learning outcomes in a more personalized and effective way. This framework includes strategies for creating a student-centred learning environment, setting clear learning objectives, and providing resources that empower students to take ownership of their education.

As a pedagogical methodological material, the framework is adaptable to other universities at different levels of teaching and learning in different areas of studies.

Framework of self-directed learning: [Knowledge base | skilltrack \(rsu.lv\)](#)

Skills Catalogue

According to the Bologna process, the learning outcomes of the study program are classified as acquired knowledge, skills and competences (European Higher Education Area, 2001). But the obtained diploma upon graduation of the study program does not indicate specific skills of the young professionals in accordance with the needs of the labour market. Meanwhile, ESCO database provides a common European framework for skills classification to link qualifications and occupations to the labour market, but it does not include pedagogical support for skills acquisition and assessment (European Commission, 2020). Within the project a unified catalogue of practical skills was created and included in the study process for healthcare education, while also providing pedagogical support in skills teaching and assessment.

In cross-border cooperation using experiences and best practices from all partner universities validated skills descriptions were developed to fulfil skills catalogue. Skills descriptions, containing a description of the performance of the skills and criteria of skills assessment, were created based on pedagogical framework and methodology.

Skills tracking system: [Skill description list | skilltrack \(rsu.lv\)](#)

IMPLEMENTATION AND RESULTS

Skills are one of the most important aspects of competence, but often employers, when assessing the readiness of future professionals, point out that the ability to implement skills in a real work environment are unclear, insufficient and even inadequate. The paradigm shift in education intends bringing skills to the foreground, so higher education institutions need to develop a skills tracking system that ensures transparent and consistent skills acquisition by providing evidence-based certification of the skills acquired for future professionals. In order to promote skills management, a concept of skills tracking system was piloted and evaluated by partner universities. Skills tracking system was designed and implemented to monitor students' progress in acquiring practical skills. It includes skills descriptions in on-line catalogue, skills plans for study course and/or study program, teaching and assessment process and as well as skills portfolios that allows students to showcase their skills acquisition progress.

As part of the project task, mapping of practical skills of undergraduate study programs implemented by the partner universities ("Social work", "Nursing", "Occupational Therapy", "Physiotherapy") was carried out, and an electronic unified skills catalogue was created, as well as descriptions of the identified skills. For mapping process 517 social work, 740 nursing, 378 occupational therapy, and 298 physiotherapy skills were submitted. After mapping and two workshops, different and common skills were identified and 240 skills were included in the skills catalogue to develop a unified teaching and assessment methodology.

The skills catalogue was integrated into learning and teaching process at all four partner universities. After one semester of use, an evaluation was carried out in order to obtain results on the acceptance, potential, and

future prospects of the skills catalogue. Using the qualitative study design where investigated 73 respondents, including 51 students' and 22 academic staff. Data collection involved focus group discussions, interviews, and workshops conducted across all four universities. The data was structured with qualitative content analysis according to the methodological approaches by Philipp Mayring (Mayring, 2014).

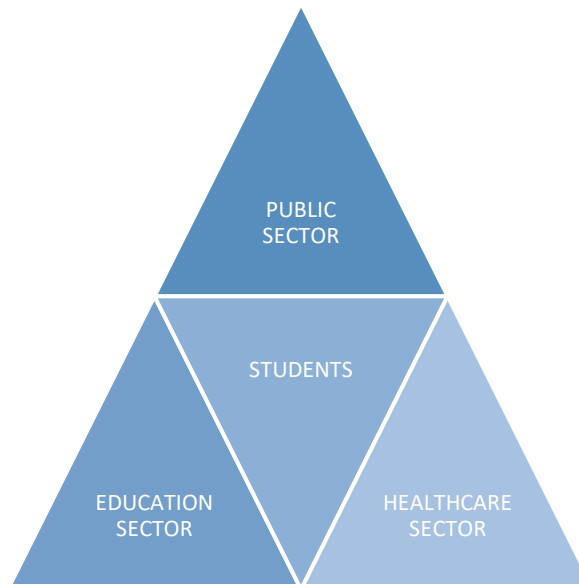
The results show that self-directed learning is particularly important to students, as time flexibility is a priority for some students. The data reveal that the skills catalogue enables self-directed learning, and it also provides a very good link between theory and practice. The detailed structure of the skills catalogue makes it easy for students to learn new skills and to better reflect on their progress. The catalogue requires barrier-free accessibility and a good introduction by academic staff so that students integrate it well into their learning processes. In summary, self-directed learning at universities may be significantly supported by a focus on practical skills and by digital methods. This way, international learning and teaching for nursing, health, and social sciences may be enhanced in a fruitful manner.

Results: [Knowledge base | skilltrack \(rsu.lv\)](#)

RECOMMENDATIONS

The management of skills acquisition in higher education institutions should be supported and promoted from the point of view of academic staff, employees, professional associations and employers to improve the quality and relevance of skills formation, to make skills and qualifications more visible and comparable, and to improve skills intelligence and information for better career choices as recommended by New Skills Agenda for Europe (European Commission, 2016). Skills-based approach has emerged in healthcare education and skills monitoring system validated in this SkillTack project can be as valuable tool to demonstrate acquired competences.

Based on the results of multiple workshops, surveys and interviews and group discussions, involving project team members, students and academic staff, a set of recommendations was developed. These recommendations were designed to be applicable to education, healthcare and public sectors, and to cover areas such as curriculum design, faculty development, assessment methods, and the integration of practical skills into study programs to implement skills tracking system in healthcare education, aiming to enhance the quality of education and the skill readiness of healthcare students and professionals.



Education sector

SkillTrack project successfully transforms the pedagogical framework and methodology in higher education, emphasizing self-directed learning and practical skill development while offering valuable data-driven insights for further educational improvements.

Implementing a skills tracking system in study process can significantly enhance the overall experience for students and contribute to their academic and professional development. Higher education institutions can maximize the benefits of these experiences, better prepare students for the global workforce, and contribute to their holistic development, as well as significantly contribute to the enhancement of study quality in both content and administration processes. Here are several ways a skills tracking system can benefit:

Detailed Mapping of Study Program Results

- Use the skills tracking system for a detailed overview and mapping of study program learning outcomes.
- Improve understanding of the learning outcomes achieved in the study program.

Efficient Development of Curriculum Modules

- Develop curriculum modules and micro-qualifications more efficiently using traceable skills.
- Utilize acquired skills and their levels to inform curriculum development.

Flexible Study Processes

- Implement a flexible approach in the study process with individualized learning plans.
- Allow re-profiling in response to changes in the field of study.
- Facilitate the acquisition of additional qualifications.

Enhanced Traineeship Planning and Assessment

- Utilize clear skill lists for traineeship planning.
- Conduct objective and regular assessments during traineeships.
- Improve student understanding of practical tasks and increase motivation.

Direct Impact on Study Quality

- Use skill lists to assess and enhance the current study content.
- Obtain direct and immediate feedback for necessary changes.
- Motivate students to actively engage in their tasks and accept academic staff instructions.

Enriched International Student Exchange

- Utilize the skills tracking system to create individualized learning plans
- Tailor exchange programs to address specific skill gaps and development areas.
- Collect feedback from international students, host institutions, and local mentors.
- Utilize the data to evaluate the success and impact of international student exchange programs.

Purposeful International Collaboration

- Facilitate a common language for discussing and evaluating students' capabilities, promoting transparency in skill development.
- Enable universities to benchmark their students' skill levels against global standards.

- Use the data to identify common skill gaps and needs.
- Collaborate on the development of joint or shared curriculum elements to address skill gaps.
- Leverage the skills tracking data to identify areas of expertise in which each university excels.
- Develop joint certification programs that recognize the skills acquired by students from multiple collaborating universities.
- Make data-driven decisions for program enhancements and adjustments.
- Implement a standardized set of skills assessments that can be recognized and understood across international borders.

Lifelong learning portfolio

- Instill a mindset of lifelong learning through the skills tracking system.
- Encourage students to reflect on their experiences, identify areas for improvement, and set goals for ongoing development.

Healthcare sector

Implementing a skills tracking system in healthcare institutions can have a substantial impact on human resource management, healthcare quality, and patient safety. Here's how such a system can contribute to these critical areas:

Informed Hiring Decisions

- Enable assessment of the skills and competencies of potential hires more accurately.
- Ensures that new staff possess the necessary skills to meet the demands of the role.
- Direct applicants to suitable fields based on their skill sets.
- Utilize skill lists to assess applicants' readiness for specific work duties.
- Address the challenge of recruiting individuals with insufficient knowledge due to workforce shortages.

- Encourage applicants to present their skills portfolio during job applications.
- Quickly select and attract employees based on their competence during urgent needs.

Targeted Training Programs

- Identify skill gaps to design targeted training programs.
- ensure healthcare professionals to continuously develop the skills needed for their roles.
- Develop a standardized skills portfolio for professional development.
- Implement skills tracking in the workplace for identifying internal trainers.
- Implement the portfolio uniformly across the industry.

Oriented Career Progression

- Recognize varying skill requirements within the same specialty.
- Facilitate targeted portfolio formation for career progression.
- Enable professionals to acquire skills at different levels within their specialty.

Objective Performance Evaluation

- Skills tracking provides a quantitative basis for performance evaluation.
- Provides objective assessment of an employee's skills, facilitating fair and transparent performance reviews.

Identifying Future Leaders

- Identify potential leaders within their workforce by tracking skills at various levels.
- Facilitates effective succession planning and ensures a pipeline of skilled professionals for critical roles.

Continuous Quality Improvement

- Generates data that can be used to identify trends and areas for improvement. This data-driven approach allows healthcare institutions to continuously enhance the quality of care provided.

- Promotes the standardization of care by ensuring that all healthcare professionals possess and maintain the same core competencies. This consistency is crucial for delivering high-quality healthcare services.
- Ensures that healthcare professionals adhere to evidence-based practices and clinical guidelines, enhancing the overall quality and safety of patient care.
- Allows for the optimal allocation of resources by matching staff skills with patient needs. This improves efficiency and prevents overburdening specific departments or individuals.

Improved Patient Safety

- Ensures that healthcare professionals are competent in their roles, contributing directly to patient safety by minimizing the risk of errors or suboptimal care.
- Identifying skill gaps early allows institutions to address them through targeted training. This proactive approach reduces the likelihood of errors that could compromise patient safety.
- Enhancing teamwork (communication and teamwork skills) ensures effective collaboration among healthcare professionals, reducing the risk of communication errors that could negatively impact patient safety.
- As healthcare landscapes evolve, skills tracking enables institutions to identify emerging risks or challenges. This allows for the development of training programs to address new threats to patient safety.

Public sector

Implementing a national-scale skills tracking system offers several benefits to governments and states. Such a system can contribute to informed policymaking, workforce development, economic growth, and overall societal advancement. Here's a breakdown of how governments can benefit:

Workforce Planning and Development

- A national skills tracking system helps governments identify current and future skill gaps in the labour market. This information is crucial for planning targeted education and training programs to address these gaps.
- By understanding the skills demanded by industries, governments can align educational curricula with the needs of the job market. This alignment ensures that graduates are equipped with the skills required for available employment opportunities.
- Governments can use the skills tracking system to promote a culture of lifelong learning. Encouraging continuous skill development helps individuals adapt to changing job requirements and technological advancements.

Labour Market Efficiency

- Governments can optimize resource allocation by identifying areas with high demand for specific skills. This information aids in the strategic distribution of resources, training facilities, and educational programs.
- A skills tracking system allows governments to anticipate shifts in the job market and proactively address unemployment issues. By aligning training programs with emerging job opportunities, they can reduce unemployment rates.

Economic Growth and Competitiveness

- Governments can use the skills tracking system to ensure that the national workforce remains competitive on a global scale. This is essential for attracting foreign investments and promoting economic growth.
- Identifying and promoting key skills required for emerging industries fosters innovation. Governments can create policies that encourage the development of a skilled workforce capable of driving technological advancements and innovation.

Policy Formulation and Evaluation

- Governments can make informed decisions related to education, training, and employment policies by relying on data from the skills tracking system. This ensures that policies are evidence-based and responsive to the needs of the workforce.
- Continuous tracking allows governments to assess the effectiveness of existing policies. They can adjust strategies based on real-time data, ensuring that policies remain relevant and impactful.

Social Inclusion and Equality

- A skills tracking system can help governments identify disparities in access to education and employment opportunities. Policies can then be developed to address these disparities and promote social inclusion.
- By tracking skills across demographics, governments can promote diversity in the workforce. This inclusivity not only enhances social equity but also brings a variety of perspectives and talents to the labour market.

Data-Driven Decision-Making

- A skills tracking system provides governments with real-time, data-driven insights into the state of the workforce. This enables more accurate decision-making, enhancing the overall effectiveness of labour-related policies.
- Utilizing data analytics, governments can employ predictive modelling to forecast future skill needs and trends. This foresight is invaluable for strategic planning and anticipating economic shifts.

CONCLUSIONS

The project "SkillTrack" resulted in significant improvements in the learning experiences of students, with enhanced self-directed learning abilities and skill development. The skill tracking system provides a valuable resource for both students and academic staff, facilitating a more personalized and goal-oriented educational journey. The recommendations serve as a roadmap for higher education, healthcare and state institutions to adapt their approaches to meet the demands of the modern job market, ensuring graduates are better prepared for real-world challenges.

Skills tracking system in healthcare higher education institutions enhances study quality by ensuring alignment with industry needs, promoting individualized learning, improving assessment processes, streamlining administration, and fostering a culture of continuous improvement. It plays a pivotal role in preparing healthcare professionals with the competencies required for success in their careers. Skills tracking system in healthcare institutions not only contributes to effective human resource management but also plays a crucial role in enhancing healthcare quality and ensuring patient safety. It fosters a culture of continuous improvement, evidence-based practices, and the consistent delivery of high-quality care across all levels of the healthcare workforce. At national scale skills tracking system can empower governments to make informed decisions about education, training, and employment policies. It plays a critical role in shaping a skilled and adaptable workforce, fostering economic growth, and promoting social inclusion.

The implementation of a skills tracking system in healthcare education is a multifaceted approach that benefits personnel selection, professional development, study process, and career progression. Standardization,

flexibility, and alignment with industry needs are key elements in realizing the full potential of this approach. By adopting these recommendations, higher education institutions, government bodies and industry can contribute to the enhancement of healthcare education and, subsequently, the quality of patient care.

PROJECT TEAM



Rīga Stradiņš University (RSU, Latvia) is the leading provider of medical and healthcare education in Latvia, it also offers studies in social sciences (e.g., communication, European and international studies, business and entrepreneurship, law, etc.). University has 6 faculties with a total amount of 57 study programmes including 7 international study programmes. RSU is the third largest public university in Latvia with 10 467 students and awards degrees at all levels of study, including doctoral. The presence of international students and internationally recognised visiting professors brings an international ambience into everyday life of the University. Full-time international students from more than 77 countries constitute 25% of the overall student body. The education quality priorities defined in RSU strategy are student centeredness, simulation-based education, interdisciplinarity and internationalization. RSU owns 35 study bases and provides a study environment with high-end technologies that are the most up-to-date technologies in the Baltics.

Project leading team:

Anna Korvena-Kosakovska, project manager in Medical Education Technology Centre, is responsible for implementation of simulation-based education support systems and provision of infrastructure. Professional interests: simulation-based education, digitalisation of higher education.

Evita Grigorovica, team leader of project at Medical Education Technology Centre. Member of editorial board of the International Interdisciplinary Scientific Conference "Society. Health. Welfare". Professional interests: skills monitoring, human capital management in healthcare.

Andreta Slavinska - Deputy Director of The Medical Education Technology Centre. Project manager and researcher in several national and international research projects, active doctoral studies. Professional interests: patient safety, quality of healthcare, skills monitoring.



Arcada University of Applied Sciences (Arcada UAS, Finland) provides higher education in Health & Welfare, Business management, Engineering, Culture and media with 3000 students and 200 staff members and is one of the most international universities of applied sciences in relation to size in Finland with about 20 % international students. Arcada is a research-oriented UAS in the area of professional higher education. The education combines evidence-based education and learning environments with throughout understanding of practice and real-life related challenges and opportunities. Arcada offers 20 different bachelor degree programs and 6 master programs, professional training and continuing education. Arcada is strong in the research area of health and welfare, mental health, occupational health, simulation laboratory, health technology, measuring functional capacity and health service design. Arcada aims to educate students for an international labour market responding to societal demands for skilled professionals and competitiveness in a local, national or transnational context like the European Higher Education Area (EHEA).

Project leading team:

Filip Levälähti, M. Ed. Online learning specialist and team leader for i-fabriken (Arcada's innovative factory for digital-pedagogical support, competence development and infrastructure). He's also involved in different kinds of pedagogical projects.

Carina Kiukas, PhD, Adult Education, Head of Department for the Department of Health and Welfare, Chair of the Pedagogical Council at Arcada UAS. She is also a member of the assessment group for demonstrated pedagogical competence. Her research interests include different educational development work within higher education. Teachers' learning and competence development is of great interest when seen as a driving force in the educational development work.

Jessica Silfver, MHC, RN, Midwife, Senior lecturer in nursing and midwifery. Member of the Pedagogical Council at Arcada UAS. Involved in different projects regarding developing digital solutions for teaching and training of practical skills. Currently working part time as a change coordinator.

Gun-Britt Lejonqvist, PhD, Specialized Nurse. Former director of the Nursing Programme at Arcada and responsible for a joint masters programme in Global Health Care. Now Principal lecturer Emerita at Arcada. My interest of research is clinical competence and evidence-based nursing.

Camilla Wikström-Grotell, PhD Health Sciences, Physiotherapist, Director academic partnerships. Former vice rector with responsibility for curriculum

design and online pedagogics. International quality assurance evaluator. Chair of steering group in several national and international research projects. Research interests include learning and teaching strategies in higher education, health promotion, occupational health, Health technology, evidence-based physiotherapy and philosophy of science. She has published nationally and internationally in the fields of health promotion, physiotherapy, curriculum design and pedagogy.



The Protestant University of Applied Sciences in Ludwigsburg (PUL, Germany) has been an established and state-recognized institution of higher education for several decades, with two campuses, about 50 professors, and more than 1,200 students. Study programs are offered in nursing, social work, including international and health-related social work, and education. The PUL has cooperated with the local public University of Higher Education in Ludwigsburg, Germany, for many years in order to offer mutual study programs. PUL is currently in the process of establishing a novel study program for nursing, in addition to the previously offered nursing studies. Up to now, the nursing studies were offered in collaboration with partners in hospitals and nursing schools in the region. The majority of practical training took part there, while the university provided the theoretical basis and the framework of academic disciplines. In the future, the novel study program for nursing will also more intensely rely on practical skills training at the university. The beginning of the novel study program is planned for the winter semester 2021/22 or, in case of delays due to the covid-19 pandemic crisis, in the winter semester 2022/23. The program currently undergoes accreditation. Practical skills training will become more and more important for both the new as well as the established nursing programs. Therefore, the reflection on and the implementation of skills is of utmost importance at this point in time. PUL and the partners in the Erasmus project would mutually benefit from each other. In early 2021, the novel skills lab was opened at the PUL. The full operation has been delayed due to the covid-19 pandemic crisis and its hygiene requirements, but full use is intended as soon as possible.

Project leading team:

Kirsten Brukamp, professor of health sciences, studied medicine, philosophy, and cognitive science, and worked as a physician internationally. She is a principal investigator at The Research Group Health – Technology – Ethics, that's specializes in the investigation of novel health technologies and innovation in health care. The group employs empirical methods of social science research to examine user orientation, participation in the research and development process, social interaction, and ethical implications.

Ramona Bechthold - Research Group Health – Technology – Ethics. Protestant University Ludwigsburg (PUL)



BAŞKENT UNIVERSITY

Başkent University (BU, Turkey), a non-profit foundation university was founded in 1993 by the Founding President Prof. Dr. Mehmet Haberal in collaboration with “The Turkish Organ Transplantation and Burns Treatment Foundation” and “The Haberal Education Foundation” in response to Turkey’s need for high quality higher education institutions. Today, Başkent University has 12 Faculties, a State Conservatory, 8 Institutes, 7 Vocational Schools, a Foreign Language School, 24 Research Centres, 1700 Academic staff, 10000 Administrative Staff members and around 19.000 students. Başkent University, contributing to Turkey's educational and cultural advancement since its foundation, has been carrying on its services mainly focusing on teaching and research that meet international standards and requirements of competition. Nationally and internationally, Başkent University is in the forefront in terms of research and quality teaching, carried on by its highly-qualified academic staff, and also in the dissemination of research results. Since its foundation, Başkent University has been one of the leading universities in Turkey regarding to the number of international scientific publications per instructor. Research, scientific production, and contribution to society, has always been the main priorities. Başkent University has also been awarded a Quality System Certificate and education principles are designed in accordance with these quality standards.

Project leading team:

Dr. Ebru Akgün Çıtak, professor in Mental Health Nursing and Vice-Director of the Nursing Department. Involved EU and national projects related with

technology, education and training. She has published many scientific articles on mental health nursing and elderly care.

Dr. Azize Karahan, professor in Surgical Nursing and Head of the Nursing Department. Involved EU and national projects related with technology, education and training. She has published many scientific articles on wound care, pain, nursing education, elderly care, patient and working safety.

Dr. Sultan Kav, professor in Medical Nursing at Nursing Department. Coordinated and involved several international projects including EU and World Bank. Served on the Professional International Organisation's Board. She has published many scientific articles on cancer nursing, health promotion, elderly care, supportive and palliative care.

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