



D5.5 – Academic articles submitted to open-access journals



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Project: Enhancing Research on the Integration of Formal Educational Programmes and Workplace Learning

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Executive Summary

The target of the publications in the project proposal was 15 submitted individual or co-authored academic publications by the Tallinn University team in high-ranking open-access journals. We have currently published seven articles in open-access journals, which have been linked to the project. Further, we have four publications related to the project topic that have not been officially linked to the project. This is a technical error that we are still working to resolve, specifically adding the reference to the project. Two articles have been submitted to open-access journals, and four are in progress for submission. That makes eleven published, two submitted, and four publications in progress, which exceeds expectations. This is partly because the publishing process is objectively time-consuming, and in some high-level journals, it takes almost two years to move from submission to acceptance. Most of the key products of the FEWL project have been published in a special issue of the journal *Social Sciences, "Improving Integration of Formal Education and Work-Based Learning"*, edited by the principal investigator of the project, Professor Inge Timoštšuk from Tallinn University and Professor Christian Harteis from Paderborn University. Among the co-authored publications involving colleagues from our partner universities are one published editorial, one submitted, and one planned article.

The publications cover the topic of work and its various implications to student engagement, agency, motivation, and knowledge and skill acquisition from multiple perspectives. The articles explore the views and experiences of teachers and instructors in primary schools and general secondary schools in Estonia, as well as vocational schools in Finland, and Estonian museum educators and employers on the matter of integrating work-life or work experience with general or vocational education. Additionally, the work- and agency-related experiences of students in primary and general secondary education are explored. The publications provide a comprehensive overview of recent empirical research in the Estonian context on integrating the topic or experience of work in general education, which is an internationally underinvestigated field of study.

Publications in open-access journals

1. The effect of teacher agency support, students' personal perseverance and work experience on student agency in secondary schools with Estonian and Russian instructional language

Erss, Maria; Loogma, Krista; Jõgi, Anna-Liisa

Cogent Education; 11(1); Taylor and Francis; Published 10.02.2024

<https://doi.org/10.1080/2331186X.2024.2314515>

This article explores how teacher agency support, students' perseverance and work experience outside of school are related to student agency in the context of Estonia, where Estonian and Russian-speaking students are often educated separately in schools with either Estonian or Russian instructional language. The student-level data (n = 9060) were collected after piloting the survey instrument in 2022. To ascertain the factors and common causes that correlate with student agency, which is measured in a scale constructed by factor analysis, a structural equation modelling analysis was conducted. Besides the main positive effects of teacher agency support, students' perseverance and work experience on student agency, other statistically positive covariates were found to be Estonian instructional language, male gender, higher school stage and students' socio-economic background as measured in number of books at home. Among different types of work experience, working on holidays, in student work camps, doing other paid work (i.e., working in their own business), and voluntary unpaid work were significantly positively correlated with the agency. Therefore, students learned many specific and generic skills while working. Overall, our findings highlight the importance of teacher support and work experience in fostering student agency. The type of agency measured in this scale, which combines agentic engagement in the classroom with capacity for resistance to perceived injustice, is more articulated by male students in higher school stages.

2. Integrating Work-Life and Student Work-Related Experiences in Classroom Learning—The Perspective of Primary Teachers

Nurmik, Kaidi; Timoštšuk, Inge

Social Sciences; 13(12), 649; MDPI; 29.11 2024

<https://doi.org/10.3390/socsci13120649>

A better match between formal education and work-life is seen as one approach that can help students acquire competences and knowledge necessary for successful participation in their future lives. However, emphasis is often placed on exploring practices targeted at students

nearing entry into a work-life pattern, whereas promoting key competencies and positive attitudes toward work should start at an earlier stage. We conducted in-depth interviews with 20 Estonian primary school teachers, recognized by their colleagues for outstanding practices to explore their understanding and experiences of integrating work-life and students' work-related experiences in classroom learning. While teachers involve the work-life and professions of the students' family members, they often overlook the potential of their local community. Teachers perceived the primary school context as generally supportive, with the national curriculum and cooperative relationships with families being supportive factors. Teachers often viewed students' work-related experiences as limited to tasks like maintaining tidiness, with few recognizing broader experiences, such as taking on different roles or participating in after-school activities. There is significant potential to purposefully connect work-life and classroom learning, enabling students to take on roles that promote their key competencies and agency, while personalizing learning based on their work-related experiences.

3. Primary School Teachers' Perspectives on the Relationship Between Students' Learning and Work-Related Skills

Näkk, Anne-Mai; Timoštšuk, Inge

Social Sciences; 13(12), 681; MDPI; 16.12.2024

<https://www.mdpi.com/2076-0760/13/12/681>

Primary school teachers play a significant role in preparing students to meet the demands of the 21st century. Balancing the integration of work-related skills into classroom learning while maintaining student motivation presents considerable challenges. This study explored teachers' perceptions of the relationship between student learning and the development of work-related skills through 13 narrative interviews. Data were analysed using phenomenographic and content analyses, revealing three key themes: competence-building, relatedness-focused, and autonomy-related views. Teachers highlighted the importance of developing students' general competencies and cross-contextual skills while fostering a supportive learning environment and promoting a sense of relatedness. Notably, their perceptions were more influenced by past experiences than by current contexts. These findings suggest that teachers recognise the importance of integrating real-world phenomena into classroom learning to prepare students for future challenges. The implications for teacher training include fostering reflective practices to help educators critically examine the influence of personal history on their teaching approaches.

4. Practices in Integrating Workplace Learning into Upper Secondary Education

Peterson, Birgit; Loogma, Krista; Aasa, Maret
Social Sciences; 14(1),48; MDPI; 16.01.2025
<https://doi.org/10.3390/socsci14010048>

In recent years, Estonian employers, upper secondary schools, and other stakeholders have devised various new collaborative measures to effectively integrate workplace learning (WPL) and school education. These efforts are aimed at enhancing the key competences of students. However, the educational purpose and effectiveness of the various initiatives are unknown. The main aim of this research is to explore what kinds of practices are applied in Estonian upper secondary schools to integrate formal education and WPL, and the experiences and requirements of schools and employers in this area. The empirical study is based on individual and focus group interviews conducted with upper secondary school teachers, head teachers, and employers. A phenomenological approach and inductive thematic analysis were used to examine current practices. The results of the study show that workplace learning is integrated into school learning mainly for the development of key competences and career competencies. An important part of the learning process is reflecting on experiences implemented via institutional cooperation. In core or foundation subjects, especially STEM subjects, the topics of work life or recognition of work experience are rarely encountered in school.

5. Conceptualising the Learning of General Upper Secondary Students at Work.

Loogma, Krosta.; Peterson, Birgit; Aasa, Maret
Social Sciences 13(12); MDPI, 18.12.2024
<https://doi.org/10.3390/socsci13120686>

The share of general upper secondary students working or having acquired work experience in an authentic work environment in parallel with learning in formal educational settings is expanding. It is therefore important to understand how learning in an authentic work environment and the interrelationships between work and school learning support the development of students. The main aim of this study is to understand and conceptualise the early work experience of students studying at general upper secondary schools. This study applies a phenomenological approach by conducting semi-structured interviews with students who have had work experience in authentic work environments. The main results of this study show that the variety of meaningful skills and competences developed in the work environment is rather great. Mostly, generic competences are learned at work. The incorporation of elements from one practice into the other (work to school or school to work) also occurs. Knowledge learned at school in traditional subjects and in elective courses is applied at work in a few cases. The positive impact of work experience on school studies, however, was reported—better time planning, increased motivation to learn, and increased career awareness.

6. Upper Secondary Students' Learning at Work: The Effect on Agency in School

Maria Erss, Krista Loogma

Social Sciences 14(1), MDPI, 3.01.2025

<https://doi.org/10.3390/socsci14010017>

In light of the fact that an increasing number of upper secondary school students in Estonia work in parallel with attending school or during school holidays, the purpose of the study was to ascertain whether work experience and the competencies acquired through work are, in combination with other school-related (teacher agency support), personal (resilience, achievement in Estonian language, mathematics and history) and socio-demographic (gender and mother tongue) factors, related to student agency in school. The second aim was to broaden the understanding of what students learn at work. The study used a mixed-methods approach involving a survey of upper secondary students (aged 16–19, $N = 3179$) in 30 schools followed by qualitative interviews with 18–19-year-old students who have gained work experience ($N = 13$). The analysis comprises a hierarchical linear regression analysis ($N = 1947$) and a thematic analysis of the interviews. The results indicate that work experience, perseverance, teacher agency support, male gender and Estonian mother tongue are positively related to agency while various skills learned at work had no relationship and student achievement in history was only relevant before work experience was added to the model. The interviews showed that students develop skills related to, e.g., self-regulation, self-awareness, career-awareness, social skills and self-confidence through work.

7. 'They Were Surprised That Such Jobs Even Exist...' Supporting Students' Career Awareness During Learning Activities at Museums and Environmental Education Centre

Uppin, Helene; Timoštšuk, Inge

Social Sciences13(12), 696; MDPI, 20.12.2024

<https://doi.org/10.3390/socsci13120696>

Many factors influence students' career awareness and future career choices. Curricula-related learning activities that entail boundary-crossing between formal and nonformal contexts, such as museums and environmental education centres, can also broaden perspectives. Out-of-school learning can unveil career trajectories, introduce professions, spark interest in new topics, and support lifelong learning. Nevertheless, it is unclear how on-site educators of museums and environmental education centres perceive or address supporting students' career awareness. We aimed to explore how Estonian on-site educators perceive the connection between curricula-related learning at their institutions and students' career awareness (namely, work-related knowledge and self-awareness). The qualitative data are drawn from two datasets: (1) 27 out-of-school educators chosen by purposeful sampling participated in focus-group interviews about their practice; (2) 43 out-of-school educators filled out open-ended online surveys on career awareness education. Qualitative content analysis was used to find meaningful patterns from the dataset. Various specific examples of work-related learning activities emerged. However, career awareness was often understood

narrowly or had not been previously conceptualised: students' self-awareness was seldom explicitly perceived as part of career awareness. Moreover, supporting students' lifelong learning or the development of sustainability competencies was explicitly emphasised only by more experienced or outstanding on-site educators.

OA publications related to the topic

1. "Eks me oleme kõik natuke idealistid." Muuseumite ja keskkonnahariduskeskuste õppeprogrammide juhendajad / 'We are all slightly idealistic.' The On-site educators of museums, science centers and other similar institutions

Uppin, Helene and Timoštšuk, Inge
Mäetagused 88, Eesti Keele Instituut, 2024
https://doi.org/10.7592/MT2024.88.uppin_timostsuk

The diverse and egalitarian nature of Estonian education has been attributed to the relatively high degree of teachers' autonomy. Among other things, teachers are free to decide how and where to teach, and it is very common to teach in out-of-school settings such as museums, science centres, etc. The network of different learning sites that schools use has not been thoroughly described in previous literature and is thus somewhat hidden and vulnerable to rapid societal changes. Thus, this article aims to describe the practice and perceived role in formal education of on-site educators from museums, environmental centres, and other similar institutions of science and culture.

2. The Relationship between Learning Context and School Burnout at the End of Primary Education

Näkk, Anne-Mai and Timoštšuk, Inge
Preprint, SSRN 02/2024
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4733532

Teachers have a crucial role in guiding students to master concepts and skills that empower them to engage in social activities within and outside the school context. Promoting a broader learning context has become pivotal in achieving this goal. However, prior research has highlighted varied approaches teachers use when referring to context. As students get older, they perceive learning to become increasingly focused on subject content and less on their context, potentially resulting in a decline in their overall well-being and contributing to school burnout often experienced by middle school students. Therefore, our aim was to explore the relationship between students' experiences with context in learning and school burnout at the end of primary school. Four distinct teacher profiles emerged from students' perceptions

of how teachers foster broad context in their lessons. Those students who perceived a more comprehensive integration of contextual aspects into subject learning were found to be less prone to experiencing school burnout. Contrarily, students who perceived a narrower integration had experienced cynicism towards school. The findings indicate the need for professional development programs to support and include in creating a broader context in their lessons, including students' context, thereby enhancing the overall educational experience for students.

3. Primary Teachers' Perceptions of Agency-Supportive Learning Environments

Kaidi Nurmik, Inge Timoštšuk

Preprint, SSRN 10/2024

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4999400

Our study focuses on learner agency which is perceived as students' proactive actions in shaping their learning experience, based on their interests and ideas. More specifically, we proceed from a socio-cultural approach emphasising the influence of the surrounding context on the formation of learner agency. We argue here that an agency-supportive learning environment is viewed as a broader learning environment, which includes contextually rich learning experiences, real-life settings and interactions with different people. We applied an ecological perspective to illuminate the factors that shape learner agency in a learning context and conducted in-depth interviews with 20 primary school teachers. Our research shows that although teachers' practices involve aspects indicating they consider agency-supportive aspects, such as involving others in learning and valuing cooperation, unused potential remains. More emphasis should, therefore, be placed on creating contextually rich learning situations that enable social interactions in an authentic context, encouraging collaboration between various people and involving learners in shaping their learning experience. Further research is needed to address the tension between promoting learner agency and managing institutional constraints. Based on our results, we can suggest that teacher education plays a pivotal role in supporting teachers' understanding and skills in creating an agency-supportive learning environment.

4. Improving the Integration of Formal Education and Work-Based Learning

Harteis, Christian, & Timoštšuk, Inge

Editorial, *Social Sciences*, 14(11), 632, MDPI, 2025

<https://doi.org/10.3390/socsci14110632>

European education systems are widely based on curricula that have been negotiated between different stakeholders in order to provide a kind of standardized qualification framework. At the European level, the European Qualification Framework allows for comparison between qualifications from different countries. All of this goes back to the large-scale European educational reforms of the 1990s, which were aimed at establishing a European market of education and employment with individual mobility between European countries. The European labor markets widely rely on formal

qualifications to allocate individuals in the employment system. Hence, education, from the primary to the tertiary level, follows curricula that include canonical knowledge in a competence-based manner. Explicitly formulated written texts define the granting of degrees in educational systems. However, expertise, understood as the ability to perform reliably on an (extraordinarily) high level, is necessarily related to practical experiences of knowledge application. Hence, practical experiences outside educational settings are crucial contributors to the individual development of skills and capabilities.

Completed or ongoing articles pending publication

Submitted for publication:

1. Näkk, A.-M., Timoštšuk, I., & Tynjälä, P. (under review). Professional knowledge and strategies in teaching: A case study using the Integrative Pedagogy model.
Status: under review (Routledge)
2. Authors: Nurmik, K., Erss, M., & Timoštšuk, I. Students' Perceived Capacity of Agentic Behaviour at the End of Primary School: The Role of Enriched Learning Environment.
Status: submitted for publication (Taylor & Francis)

Articles in progress:

1. Authors: Nurmik, K. & Timoštšuk, I.
Title: Supporting Student Agency through an Ecological Perspective: Insights from Estonian Primary Teachers
Planned submission to: Education 3–13
Status: manuscript in preparation
2. Authors: Nurmik, K. & Timoštšuk, I.
Title: Primary Teachers' Perceptions of Agency-Supportive Learning Environments
Planned submission to: to be determined
Status: manuscript in preparation
3. Authors: Näkk, A.-M., & Timoštšuk, I. Õppimise tähenduslikkuse toetamine enesejuhitud professionaalse arengu peegeldajana [Enhancing meaningful learning as an expression of self-directed professional development].

Planned submission to: Eesti Haridusteaduste Ajakiri.

Status: manuscript in preparation

4. Kärkkäinen, K. & Loogma, K. Practices supporting migrant students' learning in Finnish Vocational Education and Training: migrant students' perspective. Planned submission to: to be determined. Status: manuscript in preparation

Conclusions

The comprehensive list of publications and the provided abstracts show that the Tallinn University team has improved its capacity to produce high-quality scientific articles on the topic of integrating formal education and workplace learning. The novel areas of research involve conceptualising work and its benefits in primary and secondary general education, connecting work experience with the development of various useful, specific, and general skills, including the development of agency, motivation, and student engagement. Moreover, the barriers to a more regular and fruitful collaboration with workplaces and museums, and to the provision of real-life learning experiences in out-of-school settings are discussed from multiple perspectives (the views of teachers, instructors, museum educators, and employers). The opinions of students are reflected in the studies of students' work experience and their connection to developing agency, career awareness, and various skills. The articles employ multiple research methods and strategies, including surveys, individual and focus group interviews, as well as both qualitative and quantitative approaches. Most articles include suggestions on how to improve the situation in the classroom, school, or at the policy level. The number of articles still in progress indicates that work on project-related publications continues beyond the project's expiration date.