social sciences

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Conceptualising the Learning of General Upper Secondary Students at Work

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Abstract: 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.

Keywords: workplace learning; general upper secondary education; process-based model of workplace learning

Citation: Loogma, Krista, Birgit Peterson, and Maret Aasa. 2024. Conceptualising the Learning of General Upper Secondary Students at Work. *Social Sciences* 13: 686. https://doi.org/10.3390/socsci13120686

Academic Editors: Kittisak Jermsittiparsert, Ismail Suardi Wekke, Oytun Sozudogru and Jamaluddin Ahmad

Received: 8 October 2024
Revised: 13 December 2024
Accepted: 16 December 2024
Published: 18 December 2024

1. Introduction

1.1. Background and Problems

The share of school students working or having work experience in an authentic work environment in parallel with formal studies in educational settings is expanding (e.g., Gijbels et al. 2021, p. 34). For example, the statistics in Estonia describing under-age students engaged in work alongside school show that this practice is increasing. While the share of students up to 17 years old working alongside school comprised one-third of the age group in 2014, by 2018, already half of these students had worked during the year (Sotsiaalministeerium 2020, p. 19). Similarly, a large-scale survey of school students (N = 9060) conducted by a team of researchers at Tallinn University in 2020 indicated a considerable share of students have some work experience. In grades 6–12, in general education schools in Estonia, 62% had work experience outside school, whether short-term, temporary paid work, voluntary work, family businesses, and so on (Erss et al. 2024).

In Estonia, student work is regulated by the law (Töölepingu Seadus 2015), which also stipulates that children are obliged to attend school up to a certain age. It also regulates the type of work allowed and how often and how long they must have rest breaks. For example, students in grades 7–9 in basic school (aged 13–14 and 15–16) can work limited hours per day during the school term (2–3 days) and up to 7 h per day during the school holidays (Sotsiaalministeerium 2020, p. 7). Generally, there are two main ways students can access work. They can deliberately engage in part-time paid casual work, or they can enter the world of work via programmes that general education schools implement to help students become acquainted with work, such as work experience programmes, practical work assignments in enterprises, work shadowing, visits to enterprises, and so on.

Learning at work is generally recognised as a powerful factor for coping in a fragile, unsustainable world and in the world of work (Jackson 2023), and learning at work has meaning not just for the work itself, but also for life beyond the work (places) (Billett 2004). The work environment is well recognised as a rich learning environment for adults (e.g., Eraut 2004; Evans et al. 2011), and the list of competences that adult workers and professionals acquire at work is considerable (Eraut 2004). While work experience in formal vocational programmes is rather well researched, work experience for general upper secondary school (gymnasiums in Estonia) students in authentic work environments has attracted less attention, and, therefore, the learning potential of workplaces and the significance of workplace experiences for upper secondary students are underestimated.

At the same time, the share of short-term, temporary, and casual work (e.g., gig work, contingent and precarious work) is growing in labour markets (Smit et al. 2020). The emergence and growth of new short-term, casual, and digitalised forms of work and changes to the time and place of work (e.g., Cairns and Malloch 2011; Harteis et al. 2023) require new insights to understand workplace learning in contemporary and future labour markets. Researching the work experience of upper secondary students, who primarily work in temporary or part-time roles, or in short work assignments in the summer, on weekends, and in parallel with learning in formal education, can deepen our understanding and discussions about the learning of non-permanent workers at work by turning our attention to the work environments and interdependencies at work, employment relations, and so on (Evans et al. 2011, p. 170).

Work experience at an early age can be a valuable resource for learning about work, understanding working life, and to help students clarify possible career options and post-school pathways (Billett and Ovens 2007), as well as develop competences.

Furthermore, participation in authentic work environments enriches student options for learning in various environments and understanding the role of context in learning and the value (Barab and Roth 2006) of abstract concepts that they may have learned at school. In the best-case scenario, learning at work while learning at school can have mutual and interactive value for school learning and learning at work. Therefore, the connectivity between learning at school and work experience is significant (Tynjälä et al. 2021). The possibilities to learn while participating in an authentic work environment may expand the students' affordance network that is available for individual students to learn from different contexts (Barab and Roth 2006).

The analysis of work experience for students in gymnasiums should focus on the factors that the students perceive to be significant and meaningful as having an impact on their learning at work and beyond and on its interrelationship with school learning.

1.2. Aims and Research Questions

The aim of the current study is to understand and conceptualise early work experience in authentic work environments for students studying in gymnasiums.

1. What factors of learning emerge in the students' work experience?
2. What skills and competence development do the work environment support?
3. How do students perceive the mutual relations between learning at school and workplace learning while participating simultaneously in formal education and authentic work environments?

1.3. Previous Research

There are a number of capabilities (knowledge, skills, competences, understandings) that adults learn in various work contexts. For example, Eraut (2004) has described eight clusters of capabilities that people acquire at work informally in various work contexts: task and role performance, awareness and understanding, academic knowledge and skills, personal development, decision making and problem solving, and teamwork and judgement (p. 265). Generally, workplace learning differs in nature between different types of work, for example, between jobs requiring higher education compared to those requiring

lower education levels (Illeris 2011). The difference in the type of learning required for skilled workers and professionals is also described in terms of the degree of independence and responsibility and is related to self-directed learning at work. A limited degree of independence and responsibility at work correlates to a limited degree of self-directed learning at work. For example, the workplace learning of IT professionals, having more independence and responsibility at work, tends to be more self-directed than carpenters (Loogma 2004). Furthermore, knowledge workers, for example, need an inquiring mind, ready to learn continually and adapt constantly to new knowledge and new ways of doing things (Regan and Delaney 2011).

Studies on the early work experience of students in general education are rather scarce. In the context of the USA, students who work during high school exercise agency as it reflects their future goals by building human capital either through education or work. Academically oriented students tend to keep their workload moderate, using work mainly as a side line or even to save for college. Those students with less interest in academic studies tend to work longer hours and take on more responsibilities at work at the expense of school work (Mortimer 2019, cited in Erss et al. 2024, p. 13). In the Australian context, the authentic work experience of paid part-time work for secondary school students indicates that meaningful learning occurs not just in connection with work and working life but also beyond the learning at work, in connection with post-school options and pathways (Billett and Ovens 2007).

Earlier research has revealed that there are many significant aspects about how work experience can help students develop competences, including employability competences, and therefore prepare them for post-school life, particularly for their working life. Earlier research has highlighted the significant interrelations between work experience, the development of generic competences, and the correlation of work experience with agentic capacities exercised at school (Erss et al. 2024).

A study conducted by Erss et al. (2024) revealed that young people who did work during general education develop a wide range of cognitive and non-cognitive capacities, including generic skills and competences. This large-scale quantitative study in the Estonian context (N = 9060) indicated a number of the students' self-reported skills and competences were acquired at work. The list includes the following (% from all answers): social skills (communication skills, team work, collaboration)—32%; specific skills (practical skills related to a specific field or subject, incl. sports, financial literacy)—26%; self-regulation skills (time management, resilience, patience, handling stress, goal orientation, persistence, concentration, metacognition, which helps to regulate behaviour)—19%; skills about the work, incl. discipline, work ethics, following rules/requirements—12%; self-awareness and applying other life experiences—9%; self-confidence (courage, independence)—7%; responsibility and dutifulness—7%; did not gain anything—6% (Erss et al. 2024). Therefore, the skills and competences reported most as learned or developed at work were social skills, field or school subject-related skills, and self-regulation skills. Students also learned about the work and about behaviour in the work environment and, importantly, about themselves (ibid).

However, it is not only skills and competences that students can acquire at work. Work experience makes it possible to make more informed choices about working after leaving school (Billett and Ovens 2007, p. 86). In addition, student work experience may provide schools with opportunities to enrich school learning by integrating the work experience into formal education programmes. A recent study conducted by the authors (Peterson et al. 2024) shows that employers and teachers also assert that work experience facilitates the development of generic skills and career competencies in students, which aligns with the goals of the national curriculum for upper secondary education. Teachers and employers particularly highlight the enhancement of social and cooperation skills, as well as self-awareness. Additionally, students cultivate an entrepreneurial attitude, time management skills, problem-solving abilities, punctuality, responsibility, and good work habits. Earning money through work experience boosts their self-confidence and

independence, thereby contributing to self-realisation and the acquisition of practical skills advantageous for future employment. Authentic work experience aids students in understanding job roles, responsibilities, and realistic career expectations, thus addressing knowledge gaps regarding various career paths.

2. Theoretical Considerations

Contemporary approaches to learning in general, as well as learning at work, treat learning as a holistic and relational phenomenon. Socio-cultural theories of workplace learning emphasise learning as an ongoing process across people's lives and careers (Beier 2022) through participation in various environments and activities.

Emphasis on learning, as embedded in different institutional and community settings that people are simultaneously part of, is also manifested in concepts, such as lifelong and life-wide learning as well as learning in the lifeplace (e.g., Harris and Chisholm 2011), that try to make sense of the continuity and holistic nature of learning and apply these ideas to understand workplace learning better.

2.1. Learning Factors at Work: The Process-Based Models of Workplace Learning

One way to capture the range of acquisitions that people make at work is by looking at the process-based models, such as Conceptualising Adult Learning at Work by Marsick et al. (2011, p. 201) and the 3P Model of Student Workplace Learning developed by Tynjälä (2013) and Tynjälä et al. (2022).

The model by Tynjälä (2013) and Tynjälä et al. (2022) is about student learning at work, emphasising that the context of learning at work for students is different from that for adults also involving the educational context.

Both process-based models conceptualise workplace learning as a three-stage process, distinguishing between factors that frame: first, workplace learning through the learners as individuals, their background characteristics, and the learning context (learning inputs or pre-stage); second, the workplace learning process, involving activities at work, informal learning, (social) mechanisms of learning at work, and so on; and, finally, outcomes/products, such as performance, competence development, understandings, and so on.

The value of the process-based models is that they see workplace learning as a continuing interrelated process that is multilevel and context-specific, placing workplace learning into the broader socio-cultural context, at the same time considering the organisational and learner-related individual circumstances.

Furthermore, the models stress the significance of context, which includes the individual learning space, team, group, peers, web sources, the organisational learning environment, and the cultural context. In each stage of the process, different actors and factors can be considered.

We suggest that, in the process of workplace learning for gymnasium students, at least the following factors can be considered as significant for the students: the context, informal learning at work, and the development of competences.

2.2. The Context Dependence of Workplace Learning

Workplace learning and performance (at work) are shaped by multilevel contextual factors (Hager 2011, p. 23). However, the contextualisation of workplace learning at the same time recognises "relational interdependence" (Billett 2008), mutual interactions, and interdependencies between the learners' backgrounds and a range of individual characteristics (learning biographies, motives, etc.) on the one hand and contextual factors on the other.

The workplace as a meaningful environment manifests in the concept of *affordances of the workplace*, which is seen as a powerful factor determining the impact and/or outcomes of workplace learning, such as the development of competences at work (e.g., Hager 2011; Billett 2008; Ellström 2011, p. 104). Affordances of learning environments as aspects of

working arrangements that potentially require and enable learning (organisation, activities, staff development, etc.) are found in all workplaces (Evans 2020, p. 167) and are mediated by the relationship between the learner and the environment (Jackson and Barnett 2020, p. 7). However, because of context dependence, workplace learning may also be rather narrow, accidental, depending on the work environment, tasks, and other workplace-specific circumstances, and is often poorly theorised (Illeris 2011, p. 39).

2.3. Competence Development as an Outcome of the Workplace Learning Process

Illeris (2011) provides a holistic and broad understanding of competence, arguing that learning at the workplace as a whole can promote learner competences. Competence is treated as a unifying concept that integrates everything necessary to perform in a given context or situation and the ability to handle unforeseen and problematic situations (Illeris 2011, p. 42). This broad and holistic understanding of competence includes motivation, emotions, engagement, and the practical value dependent on positive interest and attitude (ibid, p. 43). Mulder et al. (2009), similar to Illeris (2011), understand competence as a consistent whole, as "...a series of integrated capabilities, consisting of clusters of knowledge, skills and attitudes necessarily conditional for task performance and problem solving and for being able to function effectively in a certain profession, organisation, job, role and situation" (Mulder et al. 2009, p. 757). However, Mulder et al. (2009) distinguish between competency (plural competencies) and competence. Competence incorporates competencies (as elements of a competence) embedded in certain tasks, situations, and jobs and obtains meaning only in a specific working context (ibid). This approach is useful for understanding and capturing the great complexity of competence and, at the same time, allowing us to flexibly construct and comprehend possible frameworks of the capabilities necessary to manage working and acting in contemporary and future working life, as well as to turn attention to preparing people for unknown situations (Illeris 2011, p. 43). Examples of the frameworks of competencies can include entrepreneurial competence (e.g., European Commission 2003; Loogma et al. 2021, p. 94), EU key competences for lifelong learning (2018), digital competence (Vuorikari et al. 2022), and others. However, the competencies embedded in different frameworks of competence are overlapping. What competences and how people may acquire them in working contexts depend on the learning potential of work or, more broadly, on the affordances of a workplace.

2.4. Informal Learning and Social Learning Mechanisms at Work

Informal learning at work tends to become more significant due to transformative changes in labour markets and the increased movements of workers between jobs (Loogma 2004). In addition, informal workplace learning is sometimes unnoticed, having a tacit dimension (e.g., Hager 2011, p. 25; Ellström 2011). Informal learning is in separate forms in work practises and tasks at work, mediated by actions and interactions (with colleagues, clients) in dealing with tasks. Informal learning is learning that occurs regularly at work and in everyday life but is subordinated to the other activities, such as work practises and tasks, meaning that learning is not the primary goal of an activity and may occur without awareness or the intention to learn or may involve more or less deliberate efforts to learn (e.g., Eraut 2004; Ellström 2011). Informal learning incorporates important and significant mechanisms that facilitate learning at work (Ley et al. 2014; Loogma and Aasa 2024). Ley et al. (2014, p. 1045) suggest that there are three significant (social) mechanisms of informal workplace learning: (1) peer facilitation (Marsick et al. 2011) and learning from others (colleagues, clients) by asking and providing help, guidance, and support, whether individually or collectively; (2) the acquisition of new experience by tackling challenging tasks, (new) task performance and reflection and sense making in everyday work; and (3) participation in workplace social activities, such as participation in various groups and teamwork, learning the working practises of others, supervising and mentoring, which entail learning about the students and from the students, and learning new ideas that arose from joint consultations (Ley et al. 2014).

3. Methodology

We approached the research questions using a qualitative method to provide deep, rich insights into aspects of the students' work experience that are not easily quantifiable. This approach is particularly valuable when the aim is to understand the meanings, experiences, and perspectives of participants in their natural contexts (Denzin and Lincoln 2011). The role of the researcher in qualitative research is multifaceted, encompassing various responsibilities that ensure the integrity and depth of the study. We considered one of our primary roles as to establish a rapport with the participants to facilitate open and honest communication, which is essential for gathering rich, detailed data (Seidman 2006). This research is based on semi-structured interviews with 13 senior secondary students. The sample consists of students of both genders (5 male and 8 female), all aged over 18 years, with different contextual and regional backgrounds in Estonia. Eight students were from cities, five from the countryside. The parents of the participants included entrepreneurs, farmers, specialists, and skilled workers.

All the students interviewed had acquired work experience in an authentic work environment. Eight of the students in the sample were independently seeking jobs, meaning their work experience was not related to their school studies, while five students in the sample had school-based work experience, either through short-term internships in companies or voluntary work in external organisations. This indicates that their work experience was related to their studies and acquired as part of the school curriculum. The implementation of these school-based work experiences varies across schools. In some cases, the authentic work experience was part of an elective course, while, in other cases, it was a compulsory component of upper secondary school studies, assessed as part of school-leaving exams or undertaken as student research or practical work.

The interviewees were asked to speak briefly about their background (parents, location). After that, the focus shifted to questions about the individual meaning of work and learning, total work experiences (domestic work, voluntary work, paid work), sensemaking of one's work experiences (in terms of studying, skills and competence development, future perspectives, employability perspectives), the importance of school subjects for work, and vice versa—how work experience can be useful for school studies.

Qualitative content analysis was used to analyse the verbatim transcripts of the interviews. We analysed the students' experience inductively, coding and categorising the texts of interviews. The adopted method followed a three-step qualitative thematic analysis (e.g., Braun and Clarke 2006; Braun and Clarke 2022, p. 1297), also known as conventional content analysis (Hsieh and Shannon 2005). First, we identified and coded data from the interview transcripts (sentences and/or phrases) that refer to the various meanings that the students attributed to their total work experience as capturing its essence (Saldaña 2016, p. 8). Second, we integrated the codes logically into smaller categories, and, third, arranged the smaller categories and subcategories into broader categories or themes. Those categories indicated the patterns of meaningful factors that students identified in their work experience. However, the process of coding and categorisation was not linear, and we revised the codes against the categories several times. Furthermore, the categorisation was mostly a two-way process: in some cases, the broader categories/themes emerged first, and splitting them into subcategories followed, while, in other cases, the subcategories were integrated into broader themes.

Altogether, eight broader categories emerged from the transcripts of the interviews: (1) previous work experience; (2) motivation: from earning money to investing in the future; (3) work tasks: from simple tasks to complex ones, requiring high-level cognitive capacities; (4) skills and competences learned at work; (5) cognitive abilities; (6) what was comprehended and understood at work; (7) learning about the future: clearer understanding about possible post-school pathways; and (8) the interrelationship between work and school learning.

While preparing and conducting this study, the ethical guidelines of the Estonian Code of Conduct for Research Integrity Agreement (2017) were followed. All the participants

of the interviews were sent the document of informed consent and official cover letter of this research, including important information about the research, anonymity, and data protection. All the participants of the interviews gave their consent to participate voluntarily in this research. All names used in the text are pseudonyms.

4. Results

Although students working alongside their studies in secondary school usually do casual, short-term, or temporary work, mainly during the holidays or weekends, there are also cases when students work permanently and even full-time alongside school. Students worked as waitresses, farm workers, cook assistants, laundry workers, customer service personnel, private tutors, workers in construction, lab assistants, web designers, or leaders of small work groups. Although they fulfil rather simple jobs, often related to service roles, there are also cases where more complicated tasks, such as management duties, are entrusted to them.

4.1. First Work Experience: Short-Term/Temporary (Summer) Work, Student Summer Camps, Voluntary Work, Working at Home, School-Based Internship Programmes

Students seek job opportunities mainly through personal connections—parents, parents' workplaces, relatives, acquaintances, friends, friends of acquaintances, or the internet. Sometimes it takes a long time to find a suitable summer or temporary job.

> *I actually looked for work for a long time. . . Getting work experience so early is hard, and there certainly aren't many offers.* (Ly)

In addition, this first work experience can be gained through school internship programmes (job shadowing and other internship programmes in companies, research-related practical work, etc.). Sometimes, students acquire work experience by accepting unpaid and voluntary work, such as participating in youth organisations or other similar options.

> *During my time at [name of company], I participated in what can be described as a three-day observational internship. I familiarised myself with the operations of various departments, gaining insight into their specific functions. I was actively involved in training sessions and occasionally provided assistance. There was significant engagement through discussions, and I was quickly integrated into the team. On one occasion, I shadowed the activities in the operations department, providing me with a comprehensive understanding of their work.* (Aile)

> *As a student at a state upper secondary school, where there is a significant emphasis on modular learning, job shadowing and volunteer work are mandatory components of the curriculum. Over the past three years, I have participated in job shadowing each year. /. . ./ Additionally, for my volunteer work, I assisted in organizing shelves at a library.* (Eva)

This first summer work and work during school breaks can also lead to a more permanent employment relationship. There are cases where the first work experience becomes a continuous, contractual job in a company, although continuous work alongside school is challenging and requires much effort and learning, for example, developing time management and self-regulation skills.

> *I started working in the autumn, and initially, it was quite intimidating because it was a proper job at a company, which I did alongside school and in my final year [comment: grade 9] as well. At first, it was somewhat difficult for me to get used to the schedule and the necessity of working after school. I struggled with time management initially, especially when I had to work until ten o'clock, which was very challenging. After work, I still had to study. Eventually, I resolved this issue and managed to balance work and study time effectively. I continued working at the same company until about the middle of the 11th grade.* (Anneli)

Sometimes, however, the first substantial and responsible work experience comes from home. Participation in household chores was considered a moral obligation and a contribution to the family's well-being. In some families, it is considered self-evident that children perform household duties and help with domestic tasks. These may include a variety of tasks: various summer jobs at home/in the countryside, farm work, and different tasks around the house/helping with daily chores (small jobs at home) for the well-being of the family.

> *Oh. . . well, I have cleaned, I have chopped wood, I have stacked wood, I have mowed the lawn, I have cut branches, taken them away, raked, whatever, everything.* (Liisi)

Through household chores, various skills have been acquired, but it has also provided an understanding that well-being at home does not come without effort—understanding that the good things at home (everyday comforts) do not come by themselves and that much effort is required to achieve them.

Despite differences in the motives and meanings for the students working in those two environments (home and an authentic work environment), the students nevertheless learn while working. As a rule, the students did not earn any money for doing household chores. However, the students that worked on a small family farm or in a family business for money considered this kind of work as similar to working at home, where they had their first work experience.

> *I have not directly gone to work anywhere but I have earned a little with some work at home [small family farm].* (Martin)

However, working at home and participating in household chores was primarily considered a moral obligation and contributing to the family's well-being.

> *I see doing this [work] at home as helping my family and contributing to the well-being of all of us. I also do my part to make everything work at home, as my parents also go to work, their days are not easier than my school days, I am old enough to help, and I am doing my part.* (Malle)

Importantly, while doing household chores, the students come to an understanding that well-being at home sometimes requires hard work, and everyday comfort at home is not possible without the effort of all family members.

> *I know exactly how much it takes and how much has to be done to enjoy the result [comfort at home].* (Aliis-Liisi)

The importance of household work was particularly evident among young people living in rural areas, who have experienced a variety of household chores, including forestry, repair work, farming, and various tasks in the household.

4.2. Motivation: From Earning Pocket Money to Investing in the Future

Often, several motives are intertwined: initially, the intention might be to earn some pocket money, but, during the course of work, the motivation can change. For example, different motives might emerge, leading to the financial aspect becoming secondary.

The variety of motives to work alongside secondary school include the following:

- To earn (pocket) money, to not be fully dependent on parents and to achieve financial independence (at least partly).
- Following the example of others/peers.
- Interest in a particular activity, such as enjoying practical and simple tasks, or an interest in volunteer work.
- To do something useful with free time.
- Some students work just for the sake of earning money or for other benefits.

The motives for working can change during employment. The initial motive of earning pocket money might evolve due to various circumstances. Participating in work life can lead to thinking about the future, especially in terms of further education and career choices.

In addition, a developing and pleasant work environment, supportive colleagues, enriching interactions with colleagues, growth alongside adults, acceptance by the work team, and the conscious development of certain skills and testing oneself (e.g., overcoming social anxiety) can become the dominant motives for working. Although money may no longer be the primary motive, it is still good if it accompanies the work.

> *In the case of the first jobs, the money [was the motive], but the last time I got work, I wanted to overcome social anxiety. My parents tried to put me in an uncomfortable situation where I had to interact with customers and assist them, which worked well for me.* (Mirjam)

> *. . . in high school, I started focusing more on my career. . . I decided that I would start looking for something [job] that, so to speak, when I go to university, I would already have some experience.* (Kalle)

Some students seek work rather strategically, keeping their eyes on post-school life, considering future careers and life choices. Therefore, in some cases, they consciously focus on gaining work experience for their post-school careers, seeking experience in the field that they wish to pursue later on and also finding contacts that might be beneficial in their future work. In some cases, school internship programmes provide the incentive and opportunity to gain practical work experience.

There is a widespread understanding that (diverse) work experience to exhibit in a CV can support post-school employment and adds credibility in the eyes of employers.

> *Maybe also this personal initiative, that I hope that they [employers] will also look at the fact that I have had the willingness [to work] from a young age.* (Ly)

4.3. Work Tasks Vary from Simple Tasks to Complex Ones, Requiring High Level Cognitive Capacities

The work/tasks that young people undertake are diverse, ranging from simple tasks (e.g., maintenance work, repair work, jobs in retail stores, various customer service-related tasks, including in catering and retail sectors) to teaching, guiding small ventures (e.g., organising a summer café) and more complex tasks (e.g., marketing, more complex service jobs, such as managing the entire process in a café from start to finish—planning, menu creation, food preparation, finances, etc.). There are also tasks that require greater cognitive abilities, such as teaching, tutoring, complex analysis in research laboratories, marketing, management functions, journalistic work, etc.

> *When we ran the café, we did everything from scratch. We came up with the idea and then made all the designs. I did all the menus and designs for those. Then, well, we put up some tents and tables and decorated, made all the food ourselves, and then managed there with money and everything.* (Malle)

4.4. Learning at Work: Great Variety of Abilities and Comprehensions

The different contexts of student work provide rich and varying learning opportunities. Students reported the great variety of abilities that their early work experience offered: skills and competences, such as social skills, financial literacy, time-planning skills, and management and leadership skills.

> *Plus, there was also this communication skill, like I was somehow more open, dared to interact more, just to approach people, start conversations, things like that.* (Aile)

Students feel that they have learned important cognitive abilities, such as self-regulation skills, critical thinking, and other thinking skills, learning and increasing their awareness about themselves. Importantly, work experience has a positive impact on confidence and self-estimation. Work experience also makes it possible to learn about the rules and requirements of working life, understand the difficulties and advantages of working life, and learn and understand post-school options better.

> *I have definitely learned more about myself. Sometimes, there might be mixed feelings with some clients, but I've learned to stay calm. . . I've learned to find solutions in urgent situations.* (Ly)

Generic Skills and Competences

In terms of the learning of skills and competences, generic skills and competences were mentioned most. Among them, a complex set of social skills and competences was also mentioned. Social skills manifested in a variety of communication skills, understanding others, confidence in communication (expressing one's opinion), dealing with and preventing conflicts, patience in communication situations, expressive skills (learning to express oneself clearly, e.g., in teaching), language skills, and teamwork skills. Social skills were acquired in contexts where tasks are largely based on communication. Such situations include customer service and a variety of situations requiring interactions with customers, and, sometimes, foreign language skills as well. Furthermore, social skills were also acquired while interacting and cooperating with co-workers.

> *I have now noticed that I communicate more with my schoolmates. If, before, I communicated only with my friends, this experience seemed to show that Estonians are not at all as scary and evil as it seems, that I have expanded my circle of friends, there is more communication across the school, relations with teachers are better, and that's it, that I also face how people speak back, it gives more and more strength.* (Aile)

Work experience also teaches financial literacy: understanding where money comes from and where it goes; realising how hard it is to earn money; learning to live frugally and plan finances; and budgeting. Sometimes students plan their finances in great detail.

> *. . . and-and when doing paid work, that has taught me to plan where does the money go. How do I calculate where I put money. Me for example, now last summer, I knew that ok, I calculated from the contract what my gross salary is, I calculated that ok I should get about this much money, I would need to buy a new phone because the old one no longer worked so well, that part goes to the phone, for that, the rest I see that some part of it goes to school things that I needed, and then I got my driver's licence, I guess I already paid the exam fee myself, and all the things like that that I planned a bit.* (Liisi)

Management skills develop through taking on management responsibilities and leadership roles. The roles help to develop critical thinking and the understanding that being in a leadership role means being a role model and that, with leadership roles, the responsibility increases. Leadership experience also provides the confidence and courage to take on leadership roles in the future too (e.g., working as a shift supervisor, coordinating student camps).

> *When I worked as a shift supervisor, of course there was more supervision, so I had to start training new employees myself, let's say. Because then I also helped prepare the schedule, I was also able to immerse myself in the internal affairs of this company, which has also given me experience for the future. On a more official side, that I'm not just a customer service person on the side, that even then I'm on the side of the board, so to speak, that it's still these coaching skills and. . .* (Anneli)

Some students have also experienced roles as mentors and teachers in a work context and giving private lessons. Teaching experience has taught them to be a role model, express themselves clearly, explain things well, and convince others to listen.

4.5. Cognitive Abilities

Importantly, in many cases, students reported increased confidence as a result of their work experience. (Self)confidence is related to self-trust, courage (not fearing a work role and challenging tasks), independence, self-reliance and a growing sense of responsibility as a result of coping with demanding and challenging tasks. Their increased confidence also resulted from being well received, supported, and encouraged within the work team, as

well as being recognised by older colleagues, forming friendships with older co-workers, and feeling a sense of belonging.

Furthermore, new and challenging situations at work reveal their ability to cope and to develop communication skills. Work experience, such as the need to find solutions in fast-paced situations, can change one's self-image and self-awareness, which helps them learn about themselves, testing their strengths and dealing with weaknesses.

Kadri acquired a job keeping order at a crowded event (Ironman).

> *. . . this was a challenge, requiring observation, direction, and command, which I was not accustomed to.* (Kadri)

> *Not everyone can manage working full time alongside school; I'm proud of myself for managing it and still doing so.* (Anneli)

Students also reflect that their thinking skills, such as critical thinking, logical thinking, and clarity of thought, and analytical skills have developed during their work experience. Work has also taught them better self-control, self-management, and self-regulation combined with planning skills. There has often been an emphasis on learning time management skills, especially in cases where students work alongside their studies, where effective time management is crucial.

> *In regard to studying, it [work] has definitely taken time from me. . . but at the same time, it has also brought the ability to quickly search for solutions; since I have less time, I have to find some kind of replacements and some other options, how to do this [schoolwork] just as well and as efficiently.* (Ly)

4.5.1. Learning About Working Life: Including Learning About Work Culture, Diligence, Cleanliness, Work Safety, the Sense of Duty, and the Ability to Complete Boring Tasks

> *It [work experience] definitely added a sense of responsibility, whether it was having to do something within a certain time or having to complete a specific amount of something, or whatever it was. . .* (Eva)

4.5.2. Negative Experiences

Work experience also involved rather negative aspects. For example, it took up a lot of time (e.g., weekends), involved frustrating situations, such as being forced to find quick, effective solutions. Combining school and work (working alongside school) may not be suitable for everyone, as working while studying is challenging and difficult. This can result in dropping grades and can even lead to burnout.

> *And I think that for the majority of students, it would be very difficult to work alongside their studies in the sense that, in order to maintain their level [academic results], what they should do at school. . ., so to speak, in grades.* (Kalle)

> *. . . in the 11th grade, which was a year ago, I would say that at some point, I was almost on the verge of burnout. I was in school five days a week, working three days, with no breaks at all, and then the exam period started as well. I felt it was getting to be a bit too much, so I immediately reduced my workload. This year, I've been more mindful of how I feel, and this year I've worked about six or seven days a month, so I leave myself a bit of breathing room.* (Ly)

Some students may not be ready to enter the workforce, and a negative work experience can send a discouraging signal to others too. There can also be laziness and complacency, as well as not wanting to go to work.

4.6. Comprehension and Understanding Learned at Work

Work experience can increase the "wisdom of life" and lead to important understandings and comprehensions concerning work life. Work experience teaches us that nothing happens on its own and provides the understanding that good things and comforts (e.g., at home) do not come automatically. Nothing just happens by itself; effort must be made.

Yes, to achieve something, you must do something; not everything is free. (Robert)

In addition, students realise the importance of certain jobs and those people that do them; for example, performing simple work taught them the importance of these tasks and to value the people who do simple jobs.

Students also reported that work experience enabled them to understand better the trends and rules in the labour market and in the world of work, such as the increasing vulnerability and prevalence of precarious work (most jobs seem to be insecure, short-term and poorly paid). Furthermore, some jobs and enterprises are disappearing, some are emerging in the labour market; some fields that are highly valued in the labour market presuppose good knowledge in STEM subjects and the awareness of the skills and personal characteristics that are most valuable in the labour market.

4.7. Learning About the Future: Obtaining a Clearer Understanding About Possible Post-School Pathways

Work experience motivated the students to think about their own future prospects. There are a number of things to consider about future life and possible careers after secondary school, while they obtain a better understanding of work life through their own work experience.

The students believe that work experience provides considerable credits for future work life and employability by increasing how reliable they are for employers.

> *But in the future, I think it depends a lot on what kind of paper [diploma] you have in your pocket, so to speak; if I have a higher education, I think it will definitely be easier for me to find a suitable job in the labour market.* (Ly)

Work experience helped clarify options for future careers in terms of what field of study to pursue at university or what professional field they would like to work in. This understanding varied from very clear perspectives to coming to the understanding that this field or job is not interesting or appropriate at all.

Work signifies financial freedom and responsibility, as well as financial literacy. The students realised that work is a necessity and should not be feared; work provides opportunities and involves the development of various generic skills, including understanding yourself and others, which improves communication skills.

Young people have a rather good understanding of the labour market, at least in regard to the following characteristics of contemporary labour markets:

- Job changes are constant—some jobs disappear, but new ones emerge in their place, and this should not be feared.
- Certain sectors in the labour market are growing, including IT and robotics, services, with a demand for teachers, doctors, engineers, and the development of personalised medicine.
- Certain fields, especially those that are growing (e.g., IT, medicine), are related to maths and real science subjects at school.
- AI will influence work in the future.
- Generic competencies, such as learning ability, curiosity, responsibility, commitment, motivation, friendliness, kindness, politeness, interest in work, social skills, and resourcefulness are the most valued in the labour market.
- Students believe that having (varied) work experience and providing a CV that shows you are an active person gives them an advantage in the labour market.

The students even understand the hectic character of the labour markets, and, so, they would like to have stable work (as opposed to casual work).

> *Probably work, like if I had to choose a job for myself in the future, I'd rather go for something that I'd enjoy at the same time and that would be worth doing in the sense that the pay would be fair and the people would be decent—no arguing or any of that sort of thing.* (Mirjam)

Furthermore, they expect their future work to be enjoyable and provide fair compensation. They would also like to have a good work environment, including a reasonable employer that is understanding, not shouting or insulting.

Work experience has prompted the students to consider post-school activities and plans seriously, including further studies and future work. As a result of work experience, the students are better placed to consider possible fields in which they might want to work. These fields are rather diverse, including psychology, teaching, journalism, law and advocacy. They can consider the types of work they would like to do, or conversely, what they would prefer not to do.

> *The work I've done so far is not what I want to do in the future; although it did guide me a bit, like through the stories of café customers (what they do)—they lived good lives, and that created an ideal for me.* (Kadri)

> *Now I've started studying more seriously because I don't want to do physical work in the future; I'd rather do something more technical.* (Robert)

The work experience also helped students to understand what they should focus on in their current studies to achieve a job they enjoy, as well as the clarity to exclude work they would not want to do. They also recognise that their plans may change.

In some cases, working alongside school in high school has even led to a relatively certain career path or permanent employment (e.g., providing services to the government). In relation to planning for post-school work life, the students value the connections and contacts gained during their work experience, which they believe can help them advance in the hierarchy, provide experience for the future, and form a foundation for later life.

> *Well, it [work experience] has definitely helped me with my career and has given me connections, all the contacts. Since I actually started at a new job today, it's also because I started working back in high school.* (Kalle)

The majority of the respondents are considering different further education options; however, they are convinced that a university degree will help them better succeed in the labour market, as higher education demonstrates to employers that they have had sufficient self-discipline and motivation.

4.8. The Interrelationships Between Work and School Learning

Students recognise the relationship between school learning and learning at work as two valuable ways of learning. They see that there is some positive impact from work experience on their school studies. The work experience pushed the students to plan things better at school, as it was necessary at work. Working has also been motivating for school studies, and, for some students, working has provided new energy for studying. The motivation to study has also increased because the students realised that they do not want to do simple or physical labour in the future, and knowledge-based work requires that the students study more.

> *Coming back after to school it was just a huge motivation, like, that was the moment for me, when I kind of found what I wanted to do and then it was so motivating, I was so ready to study, to do this senior school properly, so that I could already pass so that I could already go to university, it was like a good motivation from that side.* (Heli)

Some students had the chance to use knowledge gained from work at school.

> *Then the school said that since you are already so active in medicine, why not start teaching the course yourself. . . you have an interest, you have knowledge, and just basically take an elective course. . . at the beginning I thought that first aid, maybe no one wants such a subject. That right now,. . . 60 students attend in one year through this elective subject, now there is no longer such an attitude that maybe it is a subject that no one wants to study, but in fact it is a very popular subject and an elective subject with very good feedback.* (Aile)

There were also instances of sharing their work experience with others in certain classes: "*young people teaching young people*" and being involved as a teaching assistant. Furthermore, the work experience supported their understanding of what is important to study at school and why, such as maths, languages, and public speaking. In some cases, work provided opportunities to apply knowledge acquired in school. This concerns subject classes, such as applying biology knowledge (plant genetics) in a laboratory, applying mathematics in budgeting or summing accounts in a café or using communication skills, or foreign language skills when communicating with clients at work.

In some schools, certain subjects or classes are taught in one way or another to try to establish links with work life. Examples of such classes are entrepreneurship education, career and economics education, and internship programmes where teachers try to relate school learning to real life. In these classes, teachers explain what qualities and skills are needed in the labour market and how the labour market can function to ensure a smoother entry into the workforce. In some schools, there are also language courses covering topics such as professional communication (e.g., writing letters and CVs), and different computer programmes are taught at school.

However, in most cases, the students who had acquired work experience independently did not indicate that they would have reflected on or analysed these experiences during their studies in any of their lessons. In that sense, the work was perceived as independent from their academic studies. On the other hand, some students acquired work experience as part of their academic studies and related to their curriculum. These experiences varied as the implementation of school-based work experiences also varied. Some students engaged in voluntary work with different organisations annually during their secondary school studies, while others participated in short-term internships once during their studies as part of an elective course or student research/practical work. Despite the variations in how these experiences were related to the curriculum, a common theme among these students was that the experience helped them better understand their career interests.

Students who sought work experience independently, unrelated to the school curriculum, primarily focused on earning pocket money in the beginning. In contrast, students whose experiences were related to their academic studies tended to choose placements aligned with their future career aspirations. This allowed them to experience the reality of work in their chosen field and assess whether it suited them. The outcomes of these experiences differed: for some students, the experience confirmed their career choice, while others realised that the field might not be the right fit for their future.

Notably, none of the work experiences acquired through the school-based programmes (part of the curriculum) were related to career education subjects. However, a significant learning outcome from these experiences was the development of career awareness.

5. Discussion

5.1. Summary of the Main Findings

The inductive analysis of the interviews revealed a number of factors having a role in the students' workplace learning process, while students work in parallel with learning in gymnasium. Generally, the patterns that emerged consisted of multiple factors, including the students' initial or previous work experience, their motivation to work, work tasks, and the variety of abilities and comprehensions acquired at work, such as generic skills and competences. Furthermore, students learned about work life itself and about their own future prospects, and, in some cases, they experienced how school and workplace learning can be connected.

5.2. Theoretical Reflexion of the Empirical Results

The process-based model of learning at work provided a suitable foundation for the classification and conceptualisation of the factors that have a role in the students' workplace learning. Looking at the students' workplace learning as a three-stage process (Marsick

et al. 2011; Tynjälä 2013; Tynjälä et al. 2022), we can consider the first work experience and motivation as *pre-stage or input factors*. A salient feature concerning this stage is the shift in their motivation for working; from the initial overriding motive of earning pocket money and achieving more financial independence, other motives, such as considering future education and labour market perspectives or testing themselves in challenging situations, start to dominate.

In the middle stage of the three-stage model—*learning processes at work*—the work tasks performed, the close social environment at work, and informal learning were mentioned as meaningful by the students. At the centre of workplace learning for the students is informal learning. Students rarely reported any supervision or guidance in the workplaces and more about the experience of being "thrown into the water" while starting the work. Furthermore, in the context of the temporary and occasional work that students mostly perform, this practice seems to be common for workplaces to hire students. Therefore, it is not surprising that learning at work primarily occurs in the form of informal learning. However, several (social) mechanisms of informal learning (Ley et al. 2014; Loogma and Aasa 2024) manifested in the students' experience, such as learning from others, and the support of older colleagues was particularly important. New experiences and tackling challenging and new tasks were reported as a powerful source of learning and, importantly, a mechanism for boosting their confidence. Participation in social activities at the workplaces emerged as the students found themselves in a position where they needed to supervise other (new) colleagues. This research confirms previous results on adult learning at work, such as work as a rich learning environment where various skills and competences can be learned (e.g., Eraut 2004; Illeris 2011). In addition, work experience facilitates the students' understanding of work and working life and prepares them for life in general. Importantly, the work experience helps them understand possible future career choices and post-school pathways. The latter coincides with the findings of Billett and Ovens (2007). The varied environment and working with different people, including clients in service jobs, provides a good basis for learning a variety of abilities, especially communication skills.

The outcomes of workplace learning generally fell in three broad categories of abilities acquired or supported, as follows: generic skills and competences; cognitive abilities, such as self-awareness, confidence, thinking skills, and critical thinking; and understanding the rules of work life and options for further education and a career. Those abilities overlap with the sets of competences forming, for example, entrepreneurship competence and the key competences for lifelong learning.

While the impact of work experience often depends on the complexity of the tasks and the variety of contexts at work, in addition to the fact that students can learn different things, they commonly reported acquiring better and various communication and planning skills and a growing sense of confidence. Furthermore, the shift in the motivation for working in parallel with studies was an important outcome of the workplace learning process, where, instead of simply working to earn money, the most important motivation grew out of their new labour market perspective, and further education was seen as a tool for achieving a better position in the labour market in the future.

Most students who independently acquired work experience did not reflect on these experiences during their studies, perceiving the work as separate from school. Conversely, students whose work experience was integrated into their academic curriculum often chose placements that aligned with their career goals, which helped them assess their suitability for their chosen fields. These curriculum-related experiences varied, with some students participating in voluntary work every year and others engaging in short-term internships. Despite these differences, a common outcome was the development of career awareness. Importantly, none of the school-based work experiences were linked to career education subjects, yet they still contributed to the students' understanding of their career interests.

Although there is substantial learning potential in the classroom for utilising the work experience of students, there is a lack of sharing with peers and reflecting on the work experience in the classroom. However, the teachers' competence to engage students in

constructive reflection on their work experience is a crucial factor in utilising this potential in the classroom (Billett and Ovens 2007) and could also be a focal topic for future studies. Workplace learning is currently integrated into the learning at school rather within the framework of elective courses and through a school-based working life experience. It could be a further topic of interest to focus on the integration of work experience with school learning to enable a more meaningful learning process for the students. Work experience and what is taught in school could be connected more by developing more generic competences applicable in the workplace rather than only specific subjects and abstract academic knowledge.

We can conclude that the theoretical considerations (Section 2) that we applied to the reflection and for conceptualising the empirical results, and which have been generally applied to adult learning in the workplace, also seem to fit when conceptualising and explaining learning at work for secondary school students. The process model of learning at work makes it possible to describe and integrate the variety of empirical factors of learning at work for the students into the whole process.

However, specific factors emerged that are usually not discussed in the literature on workplace learning for adults, such as learning about future career prospects and integrating workplace and school learning.

5.3. Limitations of This Study

The main limitation of our study is the small sample of respondents, and, therefore, the results cannot be generalised to larger groups of students. Rather, this research, highlighting the meanings that students attribute to working in authentic work environments alongside school, contributes valuable knowledge for further research and opportunities for expanding this field of research.

Author Contributions: Conceptualisation and draft empirical analysis by K.L.; first draft by K.L., B.P. and M.A.; empirical analysis, contributions to the writing, and reviewing this article by B.P. and M.A. All authors have read and agreed to the published version of the manuscript.

Funding: This research is conducted as part of the FEWL "Enhancing Research on the Integration of Formal Educational Programmes and Workplace Learning" project, which is funded by the European Commission.

Institutional Review Board Statement: Based on the requirements of the Ethics Committee of Tallinn University (Data protection Instruction: procession of personal data in research), the approval from the Ethics Committee (https://www.tlu.ee/en/ethics-committee-tallinn-university#head-akadeemilised-tavad, accessed on 14 November 2024) for this manuscript was not necessary (as in the study's special or sensitive data were not collected or minors were not included, etc.); therefore, we have not applied for it. However, all the participants of the interviews were sent the required document of informed consent and official cover letter of this research, including important information about the research, data protection, etc. All the participants of the interviews, therefore, gave their consent to participate voluntarily in this research.

Informed Consent Statement: Written informed consent was obtained from the patient(s) to publish this paper.

Data Availability Statement: The data presented in this study are available on request from the corresponding author due to protection of anonymity of the respondents.

Conflicts of Interest: The authors declare no conflicts of interest.

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