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Between Potential and Practice: Teacher Engagement with Blended Learning Platforms Through a Service Design Lens

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ABSTRACT

This thesis investigates why teachers with access to a comprehensive blended learning platform engage with it differently – some extensively, some selectively, and some barely at all – and what service design interventions could help close the gap between what the platform offers and what teachers use in everyday school practice. Conducted in collaboration with a Latvian educational publishing company, the study applies a Double Diamond service design framework across four research phases: a semi-structured interview with the industry partner, an autoethnographic exploration of the platform, a co-creation workshop with seven secondary school teachers, and validation interviews with two international EdTech experts. The findings show that teacher disengagement is not primarily a motivational or training problem, but rather it is a design problem rooted in interface friction, content gaps, and a structural misalignment between how the platform is organised and how teachers actually work. A consolidated set of 35 service design interventions was developed, prioritised through an impact-effort matrix, and validated by the industry partner and external experts. The study provides one of the first empirical accounts of teacher platform engagement in a small-country, single-language educational market, and demonstrates the value of combining service design methods with technology acceptance frameworks in applied EdTech research.

Keywords: blended learning, teacher engagement, service design, educational platform, technology acceptance, Latvia, co-creation, Double Diamond

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LIST OF ABBREVIATIONS AND ACRONYMS

Abbrevation / Acronym	Definition
AI	Artificial Intelligence
EdTech	Educational Technology
GDPR	General Data Protection Regulation
HEI	Higher Education Institution
ICT	Information and Communication Technology
IT	Information Technology
JAWS	Job Access With Speech (screen reader software)
K-12	Kindergarten to 12th Grade (primary and secondary education)
LMS	Learning Management System
NGO	Non-governmental Organisation
NVDA	NonVisual Desktop Access (screen reader software)
OECD	Organisation for Economic Co-operation and Development
PLLC	Private Limited Liability Company
R&D	Research and Development
RO	Research Objective
RQ	Research Question
SDSI	Service Design Strategies and Innovations
SD	Service Design
SIS	School Information System (anonymized reference to the Latvian electronic school management system)
UX	User Experience
WCAG 2.1 AA	Web Content Accessibility Guidelines 2.1, Level AA

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1. INTRODUCTION

1.1. Background of the Research Problem

The way teaching and learning happen in schools has always been changing, but rarely as dramatically as it did in March 2020. When the COVID-19 pandemic forced schools across Latvia and the world to move fully online, teachers and students had to make that transition in a single day, without preparation, training, or a choice. What had been a gradual shift towards digital tools became an overnight necessity. In many Latvian schools, the traces of that disruption are still visible: some teachers can now give lessons remotely when mildly unwell, or maintain digital material libraries they can share when absent. In some cases, the classroom is no longer defined by four walls and has become a blended-learning experience.

This shift reflects a broader trend that had been building long before the pandemic. Digital literacy is increasingly recognised not as a specialised technical skill but as a fundamental professional competency comparable to reading and writing, and one that is expected of every student, and even more of a teacher working in a modern school. In the late 1990s, during its DeSeCo project, the OECD defined IT skills (using tools interactively) as one of the core competencies of the 21st-century skill set (OECD, 2005). Policy frameworks at the European level, including the European Commission's DigComp framework, have formalised this expectation. It is a European framework that defines digital competency for all ages and skill levels, serving as a reliable benchmark in an ever-changing technological world (European Commission, Joint Research Centre, n.d.a). Yet the gap between policy ambition and classroom reality remains wide. A study conducted at the University of Latvia in 2023 found that, while pedagogy students rated their own digital competence highly, education experts painted a different picture in schools: practising teachers face significant challenges in implementing technology-enriched learning, and many hold a negative attitude towards digitalisation. This is an attitude that experts link not to unwillingness, but to a lack of accessible support and resources (Sarva et al., 2023). This tension between stated confidence and actual practice is one of the defining features of the current moment for the use of technology in Latvian education.

The gap between policy ambition and classroom reality in Latvia is now, for the first time, measurable with local data. In 2025, the IT Izglītības fonds and Riga TechGirls conducted a large-scale self-assessment of Latvian teachers' digital competence as part of the program

“Cilvēcīgi par tehnoloģijām” (or “A human approach to technology” in English). It was based on the SelfieForTeachers framework, an online platform that supports teachers in evaluating and critically examining the role of digital tools within their professional work (European Commission, Joint Research Centre, n.d.b), with 1,849 respondents (IT Izglītības fonds & Riga TechGirls, 2025a). Before their professional development programme, the largest group of teachers (42.3%) self-assessed as “experimenters” who had tried digital tools but did not use them consistently; 12.7% rated themselves as “beginners.” Only 9.2% described themselves as “experts” using technology critically and strategically, and just 2.5% as “leaders” sharing their practice with colleagues. In specific competence areas, the picture was similarly uneven: only 23.3% regularly used digital tools for assessment, 32% did not integrate any remote learning elements into face-to-face teaching, and 28.9% acknowledged they lacked the knowledge to use newer technologies in lessons at all (IT Izglītības fonds & Riga TechGirls, 2025a).

Following 29 training sessions delivered between March and May 2025, a second measurement with 1,477 program participants showed meaningful improvements. The share of “beginners” dropped from 12.7% to 2.2%, and “active users” rose from 32.7% to 47%. However, persistent gaps remained. 43.5% of teachers still only occasionally combined in-person and remote teaching, and 45.8% only occasionally adapted content using digital tools (IT Izglītības fonds & Riga TechGirls, 2025b). This confirms that even after structured training, the majority of teachers continue to follow a selective, inconsistent pattern of technology use.

This matters because training addresses individual confidence, not the design of the tools teachers are asked to use. A well-trained teacher can still be frustrated by a platform not built around their actual workflows and needs. No official national statistics exist on which platforms Latvian schools use or how intensively. Neither the Ministry of Education and Science nor any other public body collects this data. It is precisely this lack of information, combined with the pressure to digitalise, that makes this a service design problem worth examining. Education has been described as a fruitful but neglected sector for service design research (Carvalho & Goodyear, 2017), and the design of educational platforms is no exception.

That brings us closer to the research gap addressed in this thesis: Despite abundant research on student engagement with educational platforms, teacher-side engagement with blended

learning platforms in primary and secondary school contexts remains underexplored, and virtually no research exists on this phenomenon in small-country, single-language markets such as Latvia, where platform design, national curriculum, and teacher community are uniquely and closely interlinked. The platform is not a product used in isolation. It is embedded in a complex service ecosystem involving teachers, students, school leadership, curriculum cycles, and the company. Only service design thinks systemically across all of these simultaneously.

This study addresses that gap directly. It investigates why teachers who have access to a comprehensive blended learning platform use it differently. Some use it extensively, some selectively, and some barely at all, and what service design interventions could help close the distance between what the platform offers and what teachers actually engage with.

1.2. Motivation for the Study

"Technology can amplify great teaching, but great technology cannot replace poor teaching" (OECD, 2015).

The shift from printed textbooks towards digital educational platforms has created a new kind of professional challenge for teachers. Educational platforms vary widely in design and purpose. In the research literature, they are typically classified by the level of physical presence they require: fully in-person, blended, or fully online (Porter & Graham, 2016). The platform examined in this study falls into the blended category: it serves as a single toolbox for teachers to plan from the academic year down to the lesson level, hosting digital textbooks, workbooks, interactive assignments, formative assessment tools, and summative testing materials, usable across many teaching contexts.

A substantial body of research exists on how students interact with educational platforms. Their engagement levels, learning outcomes, and motivations have been studied extensively. Despite suggestions of enhanced student engagement in blended learning, few studies have specifically addressed student engagement in their research questions, and even fewer have examined teachers' strategies to promote that engagement (Heilporn et al., 2021). The imbalance is even higher regarding teacher-side engagement with platforms themselves. That means there is not much research on how and why teachers use, underuse, or avoid available digital tools. While technology acceptance among educators has been researched intensely in recent years, much of this work has focused on teachers' general acceptance of

educational technologies rather than on their intention to use a specific technology for a defined purpose in the classroom. Factors predicting usage intentions may vary by technology's specific purpose, yet this specification is often missing or vague in the literature (Kahnbach et al., 2024).

This gap becomes even more pronounced when context is taken into account. Most existing studies on educational technology adoption are conducted in large, English-speaking or Western European countries, or in HEI settings. Very little research examines teacher engagement with blended learning platforms in small countries, such as Latvia, in single-language markets, where national education reforms directly shape what content is available and when. Much of the foundational blended learning research has emerged from large US research universities, focusing on student success rates, withdrawal patterns, and perceptions of course quality (Dziuban et al., 2018).

Moving to the personal motivation for the study. Choosing a thesis topic felt less like a decision and more like an excavation. I spent time drawing a bigger picture of everything that had shaped me professionally: the roles I had held, the things I had learned during the SDSI programme, and where I genuinely wanted to go next. What emerged from that exercise was this research on the blended learning platform in collaboration with an industry partner.

The first tension I noticed was between my experience and the theory I had been accumulating. I have an MSc in Biology, yet I have always worked more with people than with nature itself. My main interest has always been in how people operate: how they learn, how they make decisions, how they create value, and why they choose what they like. Over nearly fifteen years in education as a teacher, curriculum developer, teacher trainer, and education expert across NGO, municipal, and governmental contexts, I have observed something repeatedly: people rarely behave the way systems expect them to. The gap between what institutions design and what people actually do has always fascinated me. The SDSI programme gave me a language for that fascination, and this thesis became the place to put both things together.

The second tension was between being an insider and an outsider simultaneously. I know the world of Latvian education from the inside: the rhythms of a school year, the cognitive load of lesson planning, the particular exhaustion of being asked to adopt yet another digital tool.

At the same time, the service design perspective I bring is genuinely from the outside: I approach the classroom not as someone managing it, but as someone asking how it could be redesigned. These two positions are uncomfortable when held at the same time, and I have not tried to resolve that discomfort. Instead, I have tried to use it. The insider familiarity keeps the analysis grounded; the outsider critical lens keeps it honest.

The third tension was the most personal: the gap between my past and where I want to go next. I wanted to add private-sector experience and gain a deeper understanding of how organisations make decisions about change. I am also genuinely drawn to the idea of gentle nudges: the possibility of designing small, well-placed interventions that help people do something good for themselves or others, without forcing or manipulating them. That interest, which sits at the intersection of behavioural economics and service design, had not yet found a proper home in my work. When the Project Director of the industry partner described their challenge of showing the full potential of their teaching ecosystem and engaging teachers meaningfully, I recognised the nudge question lurking within a service design problem. That recognition is what made this the right project.

I was also looking for a hands-on project that could combine my experience in education with the service design approach I had been developing. I hoped to work on something real, not a hypothetical case, but an actual organisation with actual users and an actual need. The industry partner's reputation for innovation, their specific challenge around teacher engagement, and their openness to research made the fit clear. The result is a study that is simultaneously academic and applied, personal and systemic. which, I think, is exactly what this kind of research should be.

1.3. Researcher Positioning

It is important to understand and highlight the subjectivity one can bring to the research, based on personal worldview, experience, roles, and power in relation to the research topic and participants (Goundar, 2025), especially in this research, where the field is very familiar to the researcher. In this thesis, positioning is deeply rooted in a dynamic interplay of insider and outsider roles within the educational landscape, shaped by both professional history and methodological intent. As a former educator and ex-colleague of the teachers who participated in the workshop. An intimate, insider's perspective on the daily realities, motivations, and constraints that influence teachers' engagement with educational platforms

and professional development was brought. This connection is further defined by the school principal's role as a gatekeeper. One was not only an authority figure for the participants but also in his operational influence over the workshop.

The service designer identity introduced an outsider's analytical and overview stance, enabling an approach to the educational environment focused on systemic improvement, user-centred innovation, and the co-creation of solutions. This role helps to challenge established practices and advocate for designs that better align with the needs of educators and learners alike.

While students were not directly involved in this research, their diverse levels of expertise and needs remain a critical consideration in this analysis. It was examined how educational platforms and tools must be designed to accommodate a broad spectrum of learning abilities and digital literacies, even when students themselves are not active participants in the study. The dual researcher's positioning, rooted in both insider familiarity and outsider critique, enables navigation of the complexities of the educational system with a balanced lens. This approach fosters dialogue between empathy and critical inquiry, ultimately contributing to the development of more inclusive, effective, and sustainable learning environments for all stakeholders.

1.4. Definition of Key Terms

In this section, the key terms that are central to this study are defined to promote clarity and consistency. These terms are based on their direct relevance to the research title, objectives, and questions, as well as their potential for varied interpretation within the field of education. To ensure precision, definitions from scholarly literature and established educational frameworks are extracted, as well as the industry partner's solutions.

1.4.1. Blended Learning

Blended learning is widely used in higher education, but there is no single agreed-upon definition. Researchers describe it using different emphases (technology, pedagogy, institutional strategy), which leads to conceptual ambiguity and practical confusion (Graham, 2006). Blended learning generally refers to the purposeful integration of face-to-face and online components, but interpretations vary from simple mode mixing to rich, theory-driven pedagogical frameworks (Graham, 2006). This breadth is both a strength

(flexibility, adaptability) and a weakness (ambiguity, inconsistent practice). Clear, context-specific definitions, stating what is blended, how, and why, are essential for effective design, research, and policy (Graham, 2006).

In this study, the term blended learning is used to encompass education that takes place in both the physical world and the online platform. The physical part consists of books, workbooks, laboratory equipment, and a classroom, and the online part is a digital platform that mirrors the physical environment, with videos, smartbooks, formative assessment tests, etc.

1.4.2. Levels of Education

Levels of education are described inconsistently across educational systems, which use different terms for varied parts of the education, and it gets even more confusing when European and American systems use the same words to describe different stages of education (Triventi et al., 2016). In this research about the Latvian context, the Academic Information Centre's system explanation is detailed in Figure 1.

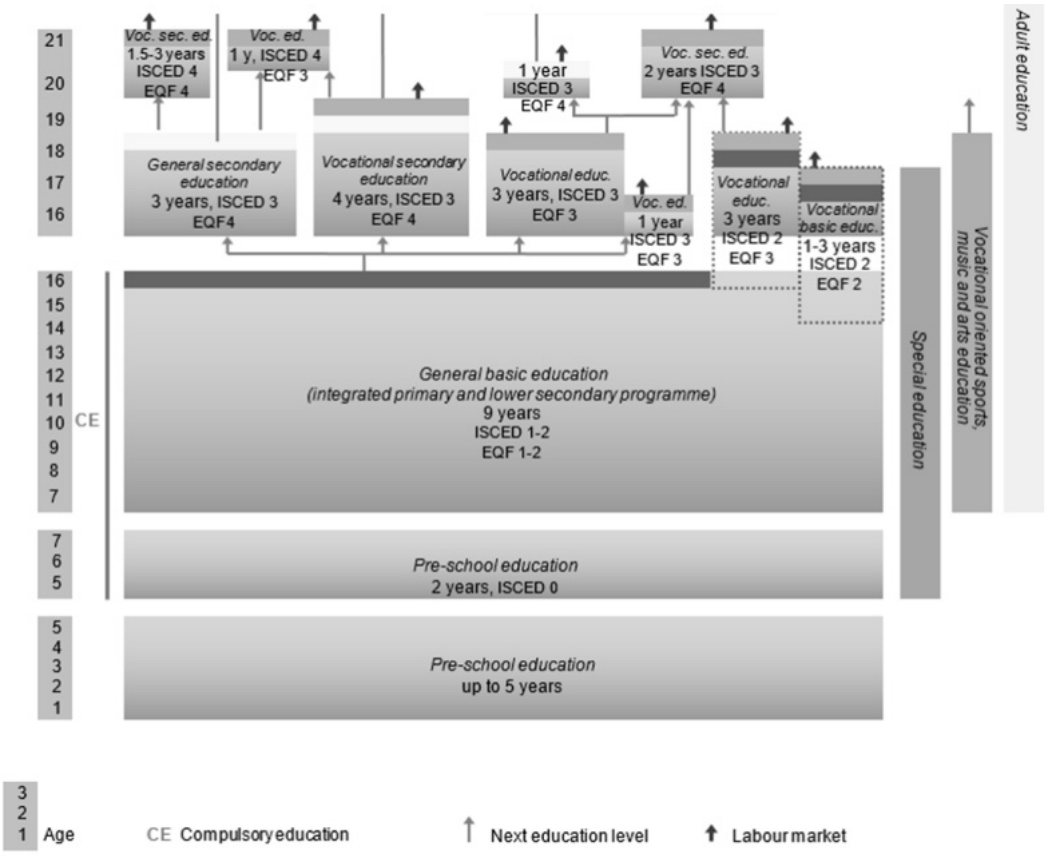


Figure 1. The Educational System of the Republic of Latvia (Akadēmiskās informācijas centrs, 2018.

The education system in Latvia is structured into four main levels: pre-school, basic, secondary, and higher education. In total, general education spans 12 years, divided into a mandatory 9-year basic education phase (integrated primary grades 1-6 and lower secondary level grades 7-9) followed by a 3-year secondary education phase that can be distinguished as upper secondary level of education (Akadēmiskās informācijas centrs, 2018). In this study, the focus is on educational resources for grades 1-12, from primary through upper secondary, even though the industry partner creates and publishes educational materials from pre-school through upper secondary.

1.4.3. The Industry Partner's Teaching Ecosystem and Its Contents

It is important to create a common understanding between the researcher and the reader to see the industry partner through a similar lens. In this case, a teaching ecosystem is a subset of the educational ecosystem, focusing on the practices, tools, and environments directly related to teaching. It emphasises the interactions between teachers, students, content, and methodologies within a learning context. The term "teaching ecosystem" is highly relevant to this study because it defines the teacher as the primary user and focuses on what teachers do in the classroom.

Figure 2 is a simplified version of the industry partner's scope and provides an overview of the blended teaching ecosystem.

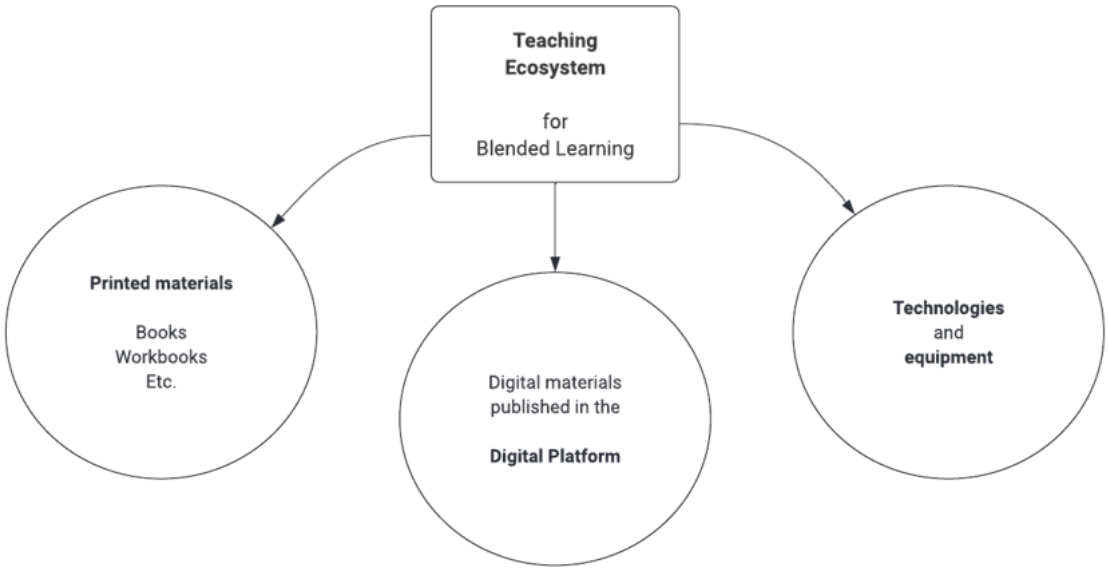


Figure 2. The Industry Partner's Teaching Ecosystem and Its Main Parts.

To summarise, the industry partner has created a teaching ecosystem for blended learning comprising three main domains for planning and executing lessons, as well as student assessment: printed materials, digital platform materials, and other equipment and technologies needed for a classroom. All the industry partner's services, products, and tools are listed in Table 1. If some parts of it are described in the thesis, then terms such as printed materials, digital platforms, technologies, and equipment will be used accordingly. Most of the research work focuses on the digital platform.

1.5. Industry partner

1.5.1. Overview of the Industry Partner

The industry partner involved in this thesis is a company operating in the fields of book publishing and education. The PLLC was established in 1992 and has moved its headquarters from Lielvārde, Latvia, to the capital Riga, Latvia. Its main activities include the development and provision of schoolbooks, digital and physical educational materials, from publishing and distribution to teacher training and support. Their focus is on teacher-led learning and student-centred education.

They started as a family business, and still, part of it remains in the family. In 2025, the majority stake in the industry partner has fallen into the hands of neighbouring Lithuanian interests. The company currently has six owners, five of whom are Latvian, but a Lithuanian PLLC has now acquired a 65% majority stake. This marks the beginning of a strategic partnership with Lithuania's flagship education company. In the coming years, a Baltic-wide group of education companies will be established to make modern educational content and technology solutions available to every student in the Baltic region (Šuberte, 2025).

The company focuses on delivering innovative, well-designed solutions for the educational system, which has enabled it to establish a stable position within its industry (Latvijas Dizaina gada balva, n.d.; Šuberte, 2025). The company exhibits a notable level of R&D intensity, reflecting its strategic focus on continuous innovation and technological advancement.

The organisation now employs 47 workers. The industry partner is a small enterprise and is structured into three principal divisions: Administration, Product Development, and Business Development (see Figure 3).

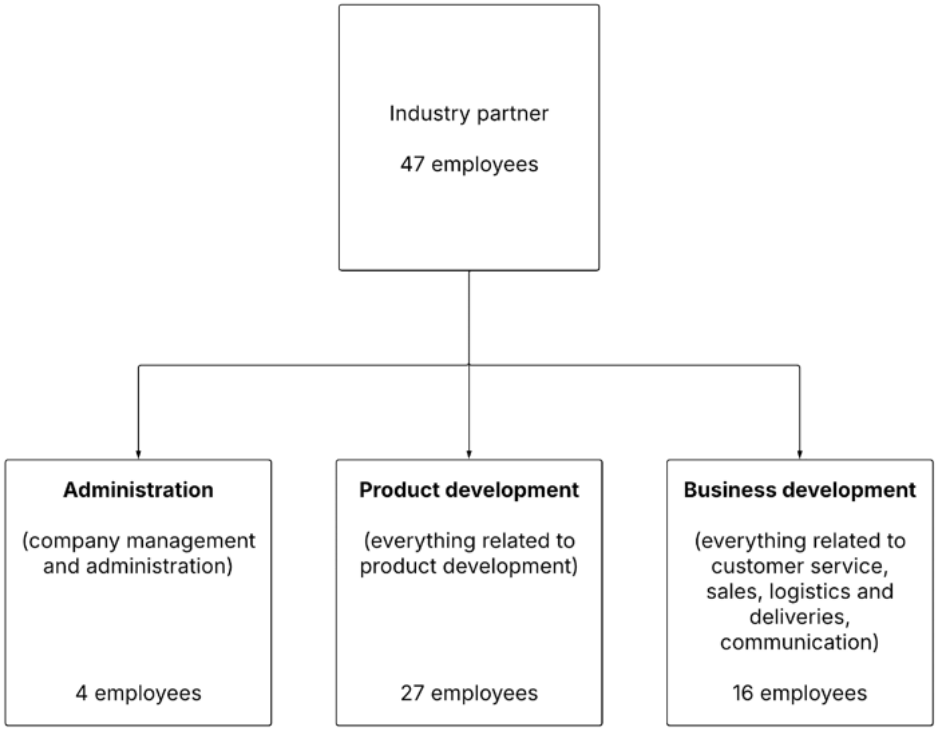


Figure 3. Industry Partner Organisation Structure and Employees (March, 2026).

The Administration division comprises four employees and is responsible for the company's overall management and administrative coordination. Its primary functions include strategic planning, organisational governance, and internal operational support.

The Product Development division is the largest within the company, consisting of 27 employees. This division is dedicated to all processes related to product creation and improvement, including conceptual design, research and development, prototyping, testing, and innovation management. Its activities are central to ensuring that the company's product portfolio remains competitive and responsive to evolving market demands.

The Business Development division includes 16 employees and encompasses responsibilities connected to customer service, sales, logistics and deliveries, and corporate communication. This division plays a vital role in sustaining customer relationships, managing product distribution, and supporting the company's strategic growth through market engagement and promotional initiatives.

The thesis project was carried out in close cooperation with the Project Director of the industry partner, who oversees and manages all educational content development projects

(team building, budgeting, scheduling, project monitoring, and steering the project toward the final product). The collaboration with the industry partner ensured that the research addresses real operational needs and practical challenges. As a result, the thesis's outcomes are directly applicable to real-world situations and may contribute to improvements within the company.

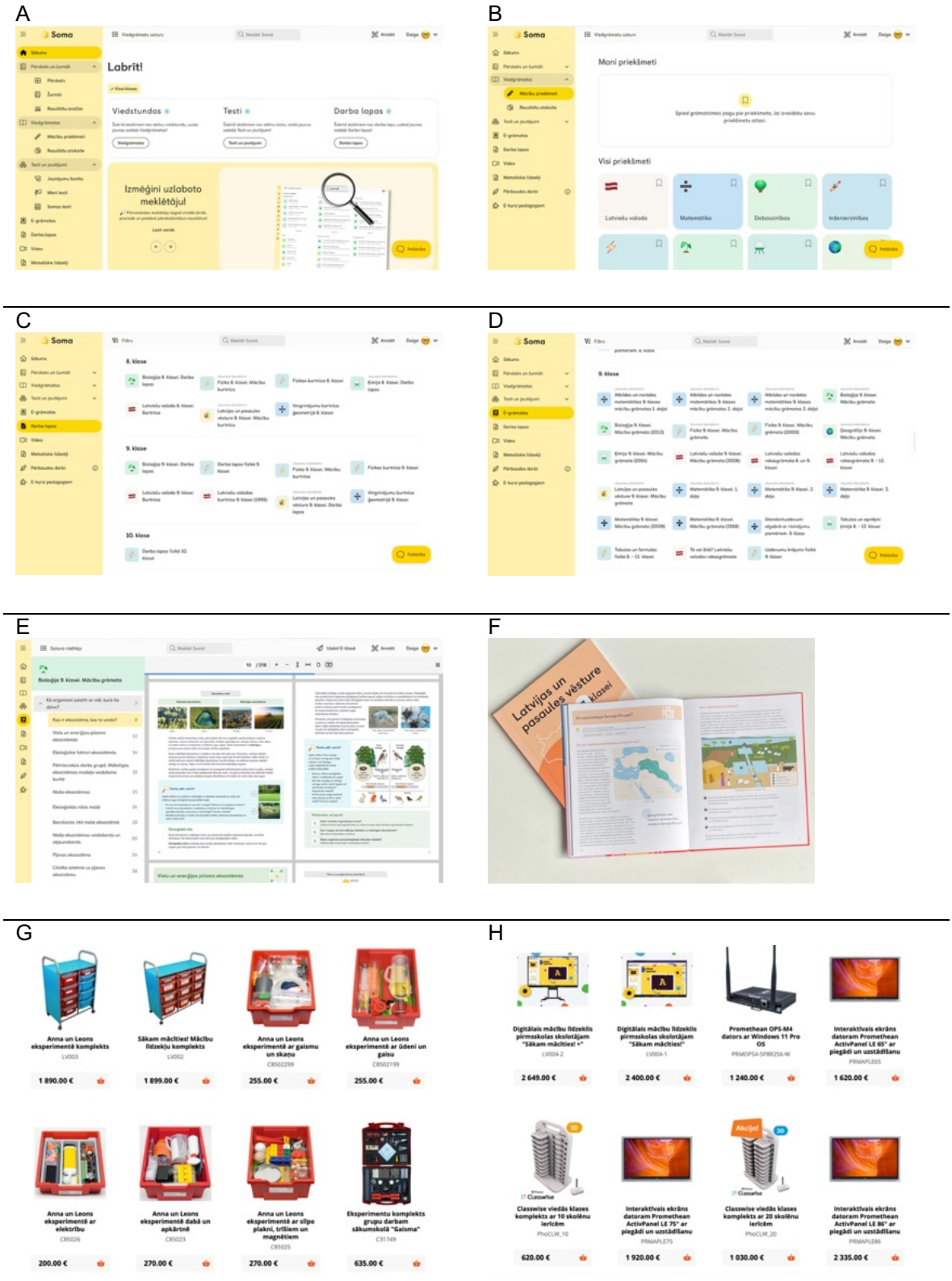
1.5.2. Products, Tools, and Services

At the beginning of their business they operated as a schoolbook publishing company and started transitioning from printing paper books and workbooks to having their first digital platform in 2009 called a "digital library", and since 2016 they have their blended learning platform where teachers can plan the whole academic year, each lesson, have all the books online and additional teaching elements such as formative and summative assessment tools, as well as interactive exercises and educational videos while still keeping and using the paper books and workbooks. Additionally, they are selling classroom equipment, from posters and laboratory equipment to specialised furniture and technological solutions (Lielvārds, n.d.a; Lielvārds, n.d.b).

All their products and services together could be described as a blended teaching ecosystem. The term "teaching ecosystem" will be used throughout this thesis to refer to their collection of physical and digital education materials, and Table 1 shows how all their services, products, and tools under this term can be systemised. Examples of their products can be seen in the section of pictures further in Figure 4.

Table 1. Elements of the Teaching Ecosystem of the Industry Partner (Lielvārds, n.d.a; Lielvārds, n.d.b).

		Media:		
		Printed materials	**Digital platform**	**Technologies and equipment**
Purpose:	**Planning**	• Teachers' books • Books	• Smartbooks (smart lessons) • E-books • Digital teachers' books • Thematic plans	
	Delivering a lesson	• Books • Workbooks	• Smartbooks (smart lessons) • E-books • Digital worksheets and workbooks • Digital geography atlas • Digital and interactive assignments • Educational videos	• Interactive whiteboard • Printed reminders and posters • Visual aids (models, etc.) • Interactive whiteboards • Laboratory equipment, work and experiment materials/kits • Other classroom equipment
	Evaluation	• Test samples from teachers' book	• Digital templates for tests • Formative assessment tasks • Formative assessment result tables	• Voting consoles
	Other	• Journals for teachers • Growth journals for students	• Trainings for teachers • Digital platform support	



A-E: digital platform screenshots, F: book and workbook for teaching history in grade 8 (author's photo), G: classroom equipment examples from the industry partner's website, H: digital solutions examples from the industry partner's website.

Figure 4. Examples of the Industry Partner's Tools, Products, and Services (Lielvārds, n.d.a; Lielvārds, n.d.b).

The company has defined teachers as the main users of its products and services, and at the platform's inception, it created and used teacher personas. They also keep in mind students, parents, school managers and administration, and municipal education departments, but treat them as secondary and tertiary users. Appendix II includes a Stakeholders Map of the industry partner, which provides a good overview.

Even though they are the main users, teachers usually do not decide to subscribe to or pay for the service. They can choose the books, but the online solutions are usually organised by the school for all the teachers, or by the municipal education departments responsible for schools within the municipal scope. The subscription fee depends on the number of students learning in a school.

At this point, in Spring 2026, the industry partner claims that more than 80% of Latvian schools subscribe to their digital platform, and approximately 50% of teachers use their books. Unfortunately, there are no official statistics about what educational services schools in Latvia choose to use. It means that more than 450 schools are subscribers, out of a total of 585 primary and secondary educational institutions (Valsts izglītības informācijas sistēma, n.d.). Of course, these two groups overlap, and some teachers are using both the books and the platform. Some schools have publicly shared that they subscribe to various educational services and mix and match the learning environments (Sējas skola, n.d.).

Usage data from the industry partner's digital platform, shared by the Project Director, shows varied levels of engagement across subjects and grade levels. Teachers have been most active in subjects such as Natural Sciences for grades 4–6, Mathematics for grades 4–6, Computer Science for grades 4–7, Latvian Language for grades 4–9, Biology for grades 7–9, Geography for grades 7–9, Physics for grades 8–9, and Chemistry for grades 8–9.

These patterns reflect the parts of the platform that are better developed. Upper-secondary-level teaching materials are still being produced after the educational reforms that took place in 2018 for primary education and in 2019 for the upper secondary education phase (Ministru kabinets, 2018; Ministru kabinets, 2019). Then, the curriculum was redesigned, and just from there, the publishers have started developing materials step by step. It is also "because of limited resources and a limited number of authors who can and want to create teaching materials", says the Project Director.

The lowest user activity on the platform was recorded during the primary school stage, where teaching practices tend to rely more on hands-on methods and less on digital resources. Overall, the usage trends demonstrate where the platform currently delivers the most value and highlight potential areas for further development and support.

1.5.3. Comparison with the competitors

When asked about the main competitors, the Project Director answered that there are no direct competitors. Other publishers focus mainly on other fields of publishing, and school book publishing is just one part of their business. Other kinds of competitors are the ones that work only on digital solutions, and the industry partner is the only player that strongly focuses on blended solutions. They focus only on school-level education as their business segment, and teachers are the main users of their products and services. For comparison details on financial indicators and products and services provided by each publisher or education service provider operating in Latvia, see Table 2.

Table 2. Main Competitors: A Comparison (Lielvārds n.d.a; Lielvārds n.d.b; Lursoft IT, n.d.; Pētergailis, n.d.; Skolas vārds, n.d.; Uzdevumi.lv, n.d.; Zvaigzne ABC, n.d).

Company:	**Industry partner**	**Competitor P**	**Competitor S**	**Competitor U**	**Competitor Z**
Year of establishment	1992	1990	2011	2012	1966
Turnover (2024), €	5 355 245	151 466	1 000 345	1 678 934	15 394 658
Profit (2024), €	439 020	3 464	61 931	442 710	419 612
Products:					
Schoolbooks	Yes	Yes	Yes		Yes
Workbooks	Yes	Yes	Yes		Yes
Teachers' books	Yes	Yes	Yes		Yes
Online platform for education	Yes		Yes	Yes	Yes
Classroom equipment	Yes				
Teacher training	Yes		Yes		
Other products, not directly related to the education		Yes	Yes		Yes

Three of the other companies are well-known for publishing school-level educational materials. Two of these also have a digital platform, but it's not as advanced as the industry partners. Two of these also provide teacher training and are investing in developing teacher training materials and organising events, both online and in person. One is focusing solely on creating and upgrading a digital learning platform. In 2024, the industry partner's turnover exceeded €5 million. One of the competitors in 2024, with a turnover of € 15,000,000, achieved a profit of more than € 400,000, which was very similar to the industry partner's. The main difference is that they are also one of the biggest publishers of fiction literature and self-help books in Latvia.

1.5.4. Collaboration and Contributions

The industry partner's role in this research is dual: it serves as both a collaborator in the research process and a validator of practical ideas drawn from the thesis findings. By integrating academic rigour with industry expertise, the industry partner ensures that the thesis outcomes are grounded in real-world applicability and aligned with current market needs.

When asked why they wanted to collaborate on this study, the Project Director stated that they are happy to help and to see how others perceive their work from an outsider's perspective. Also, one was curious about the SDSI program and what it covers, and this interaction helped to understand that as well.

The cooperation between the thesis project and the industry partner is strategic and symbiotic. The partnership was formalised through a verbal agreement of informed consent to participate in research, which covered not only data use but also outlined shared objectives, responsibilities, and deliverables. The collaboration is project-based. The relationship is non-exclusive but highly engaged, with regular check-ins and iterative feedback loops to refine the teaching ecosystem's potential updates. The partner's contributions include the Project Director's dedicated time for consultations, as well as ongoing support through responding to additional inquiries, participating in iterative feedback loops, conducting evaluations, providing commentary, and sharing relevant data.

1.6. Research Aim, Research Questions, and Objectives

The research aims were chosen in close cooperation with the industry partner. After the initial meeting, when asked what kind of service design-related study would fit their needs and make the most impact, the company's Project Director condensed it into "Our main user is the teacher, and we help them to prepare for the academic year, each lesson, and the evaluation of the students. Some teachers use all the tools extensively, but some – only particular tools, and seldom. We would like to understand why some do not use the full potential of the toolbox and how to nudge them to be more involved users." (see full notes after initial meeting in Appendix III).

At the beginning of the research, the industry partner was looking to understand how teachers perceive all the products, tools, and services they provide together as a whole, but as teachers in the workshop mostly focused on the digital platform, the research aim and objectives were slightly adjusted in a slightly different direction accordingly.

This study **aims** to investigate why teachers who have access to a comprehensive blended learning platform engage with it differently, and to identify service design interventions that could close the gap between the platform's potential and its use in everyday school practice.

To reach the research aim of proposing a systemic solution for a blended learning platform, **research questions** were formed/

Main research question (RQ): How can service design be used to identify and address the gaps between what a blended learning platform offers and how teachers actually engage with it in everyday school practice?

RQ1: How do teachers experience the platform as a service, in terms of perceived usefulness, ease of use, and fit with their everyday teaching workflow?

RQ2: What are the key strengths and service gaps teachers identify in the platform, and how do these align with the industry partner's strategic priorities?

RQ3: What platform improvements do teachers propose, and what underlying needs and service design principles do these reflect?

RQ4: How do teacher proposals compare with insights from educational technology research and expert experience in platform development?

RQ5: What interventions could address the identified gaps and support more consistent teacher engagement with the platform?

To achieve these goals and answer the research questions, the **objectives** (RO) are to:

RO1: Understand the industry partner's strategic priorities, the platform's current engagement patterns, and the company's perspective on the gap between platform potential and teacher use.

RO2: Explore the researcher's own lived experience of the platform's teaching ecosystem to surface usability, content, and navigation issues that may not be visible through interviews alone.

RO3: Map the platform's service system, its touchpoints, stakeholder relationships, and structural gaps through a service blueprint and stakeholders map.

RO4: Investigate teachers' experiences, needs, and improvement ideas through a co-creation workshop, positioning them as active participants in the design process rather than passive research subjects.

RO5: Develop a prioritised set of service design interventions that address the identified gaps, grounded in teacher feedback and evaluated for feasibility by the industry partner.

RO6: Validate and refine the proposed interventions through expert interviews with professionals experienced in educational platform development, ensuring the proposals are grounded in broader practice.

RO7: Translate the research findings into actionable recommendations and present them to the industry partner as a design deliverable.

The main target group of the research is educators, as teachers are the primary users of the industry partner. The other part is the industry partner. But students, parents, and the educational system in Latvia also benefit from this research, if we look at the broader picture.

1.7. Academic and Practical Contributions

This study contributes to an underexplored area of international research: teacher engagement with blended learning in primary and secondary schools, especially in small-country, single-language markets such as Latvia. Latvia's unique context features a recent curriculum reform, a small teacher community, few platform providers, and no data on digital tool usage. Most studies focus on large English-speaking countries or higher education, where dynamics differ. This thesis provides the first empirical account of teacher engagement with a blended learning platform in Latvia, based on data from teachers, industry partners, and experts. While not proposing a new theory, this empirical work makes a previously invisible phenomenon visible and offers a foundation for future research.

This study offers a concrete, actionable set of service design interventions for a real platform, tailored for teachers and an organisational context. Unlike hypothetical recommendations, these are built from teachers' own frustrations and needs, assessed for feasibility and impact by industry partners, and tested by experts with international experience. The prioritisation matrix makes the proposals immediately usable, showing quick wins, longer-term strategies, and scope limitations. This evidence-based, co-created design bridges academic research and organisational action, aligning with the thesis's goal.

1.8. Scope of the Research

This research faces several limitations that influence its scope and outcomes. A summary of the limitations is visualised in Figure 5.

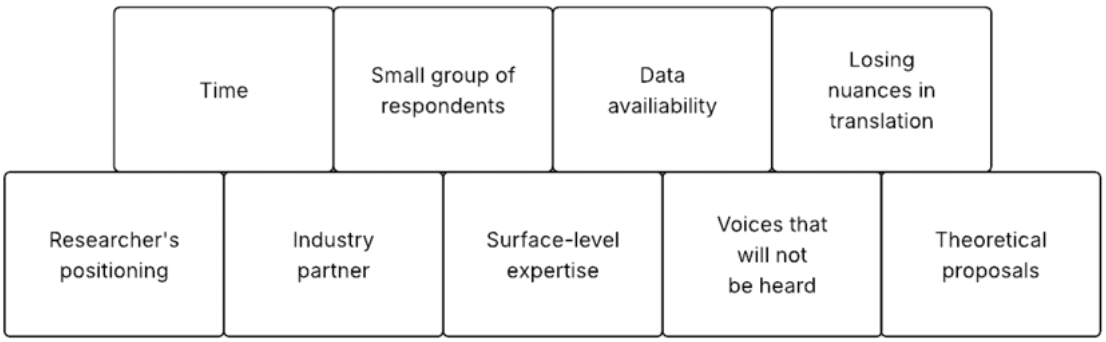


Figure 5. Summary of the Limitations of the Research.

First, due to time constraints inherent in an academic semester, the depth of user research and the number of iterations were limited, potentially restricting the breadth of insights gathered.

This thesis is shaped by the limitations of the researcher's dual insider-outsider role. As for a former educator, firsthand experience offers valuable insights but risks bias, while the outsider perspective as a service designer may overlook classroom realities. The principal's influence as a gatekeeper further complicates the research context. Although there is an aim to balance empathy with critical inquiry, the constraints of positionality may highlight the challenges of designing truly inclusive educational solutions.

Additionally, participant samples for testing and feedback were relatively small (seven users / teachers) and may not fully represent the diversity of the educational platform's potential user base. Also, they all came from one school.

Collaboration with an industry partner, while valuable for practical relevance, may also introduce bias toward the company's strategic interests or existing assumptions about users. Furthermore, the researcher's background as a teacher and in other roles within the field of education provides useful insider knowledge and contextual understanding, yet it may also introduce subjective interpretations that influence the analysis and design decisions.

Data availability posed another challenge, as access to proprietary information and a broad, diverse range of users was constrained by privacy regulations and organisational boundaries. For example, there is no official data on which platforms, books, or other education-related services schools in Latvia use.

Experts play an important role in the study, but their work focuses on other countries, and the situation in Latvia may differ. Their evaluations are limited because they did not have the time to take a deep dive into the challenges explored in this study. Instead, they shared their experience and expertise.

Also, translating terms between Latvian and English, especially in specialised or culturally nuanced contexts, can result in semantic loss or distortion.

The teachers who participated were active and really interested in helping me out with writing a thesis, coming from a highly motivated student environment, as it is a state

gymnasium. They caught a feeling that everything they said would be passed directly to the industry partner; therefore, with this mutual trust, they felt that sharing would improve their own lives. In this study, the passive and "complaining" teachers' voices are not heard. Also, student voices are missing. As they were defined as the secondary users of the industry partner's teaching ecosystem, and as educators make decisions about what will happen in the classroom, interviewing them would also be challenging, as most of the students are under 18. Their voice is added here from existing studies, not direct research. All of these together could be called "the voices that will not be heard".

A limitation concerns the depth of the second diamond of the Double Diamond framework. While the research covers both phases, the first, problem discovery and definition, is more developed than the second. The Develop and Deliver phases produced prioritised service interventions validated through expert interviews and presented to the industry partner. However, these proposals were not prototyped, piloted, or tested with users in this study. Therefore, the research provides design recommendations rather than tested solutions. The interventions serve as a starting point for implementation, with prototyping, testing, and refinement as next steps.

To sum up, the findings and recommendations should be viewed as indicative rather than definitive, providing a foundation for further exploration and validation in future work. These limitations are acknowledged to provide transparency and to enable readers to interpret the study's findings within the appropriate educational context.

1.9. Summary of the Philosophical Stance and Research Design

This research is grounded in a pragmatist philosophy, chosen because the study focuses on a real-world problem of why teachers underuse a blended learning platform and aims to produce practical, applicable recommendations. Pragmatism integrates objective data and subjective perspectives and does not require committing to a single worldview. Knowledge here is treated as constructed through the interaction of multiple stakeholders: the industry partner, the teachers, the experts, and the researcher herself.

The research approach is abductive, moving iteratively between observation and explanation. The study began with the industry partner's framing of the problem, moved into teacher and expert perspectives, and returned to the literature to interpret and validate the

patterns that emerged. This back-and-forth reflects the exploratory nature of the study and the fact that findings shaped the direction of subsequent data collection.

A mainly qualitative mixed-methods design was used. Data came from semi-structured interviews with the industry Project Director, autoethnography, a co-creation workshop with seven teachers, and two expert interviews. Quantitative data included creating a heatmap, scoring proposals and a prioritisation matrix.

Using multiple data sources provides methodological triangulation, enhancing credibility. The research strategy is a single exploratory case study focused on a single platform in a single national context. The timeframe is multi-phase, with data collected between February and April 2026. A full account of the research design, methods, ethical considerations, and analytical approach is provided in Chapter 3.

1.10. Structure of the Thesis

This thesis is organised into six chapters, followed by a reference list and appendices.

Chapter 1 introduces the research problem, presenting the background of teacher engagement with blended learning platforms in Latvia, the motivation for the study, and the researcher's positioning. It defines the research aim, objectives, and five research questions, and clarifies the key terms used throughout the thesis.

Chapter 2 provides the theoretical foundation. It reviews the literature on blended learning, teacher technology acceptance with a focus on TAM and UTAUT, design-reality gaps in educational platforms, and service design in education.

Chapter 3 outlines the research methodology, including the mixed-methods approach, autoethnography, and data collection methods: interviews with the industry partner, service blueprinting, mapping stakeholders, a co-creation workshop with seven teachers, and expert interviews. It also covers ethical considerations and limitations.

Chapter 4 presents the findings from all research methods, structured around the stages of the study. It includes the service blueprint analysis, workshop results, the prioritisation matrix, and insights from the expert interviews.

Chapter 5 discusses the findings in relation to the theoretical frameworks, research questions, and the research gap identified in Chapter 1.

Chapter 6 concludes the thesis by answering the main research question, addressing the research objectives, and proposing directions for future research.

The thesis concludes with a reference list and 10 appendices, including the service blueprint, stakeholder map, interview notes and transcripts, the autoethnography log, workshop materials and artefacts, and the evaluation meeting notes with the Project Director.

2. THEORETICAL BACKGROUND: BLENDED LEARNING PLATFORMS AND TEACHER ENGAGEMENT

A literature review for this thesis connects blended learning, teacher technology acceptance, design-reality gaps, and service design. The aim is to frame why teachers underuse a blended learning platform and how systemic, co-designed improvements can foster engagement across user groups. As mentioned before, blended learning brings together in-class elements and technology, which is why technology is also explored in this section. This part of the research helps scaffold the answers to the RQs defined before.

This thesis draws on research from both school and HEI contexts. While these settings differ in important ways, they share a common focus on learning, teaching, and educator practice. Given these parallels, insights from both environments are considered relevant and mutually informing.

2.1. Theoretical Lenses for Teacher Use of Platforms

When discussing blended learning, the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT) are crucial frameworks because they help explain and predict how users (in this case, educators, students, their parents, and institutions) adopt and engage with technology in educational settings.

2.1.1. Technology Acceptance Model

TAM is a widely used framework for explaining why people adopt or do not adopt a technology, and it models how users accept and use technology. It focuses on people's beliefs about a system and how these beliefs shape their attitude, intention, and actual use. Even though it's been around for more than three decades, it lies a foundational understanding of how technology is accepted in everyday life.

TAM is grounded in two foundational constructs: Perceived Usefulness (U), defined as the extent to which an individual believes a technology will enhance their performance or task effectiveness, and Perceived Ease of Use (E), which refers to the perceived ease of learning and using the technology (Davis, 1989; Lee et al., 2025). A typical causal sequence within TAM posits that external factors influence both E and U, which in turn shape an individual's attitude toward using the technology, leading to Behavioural Intention (BI) and ultimately to

Actual Use; additionally, E often positively impacts U (Davis, 1989). Figure 6 holds a visual representation of the model.

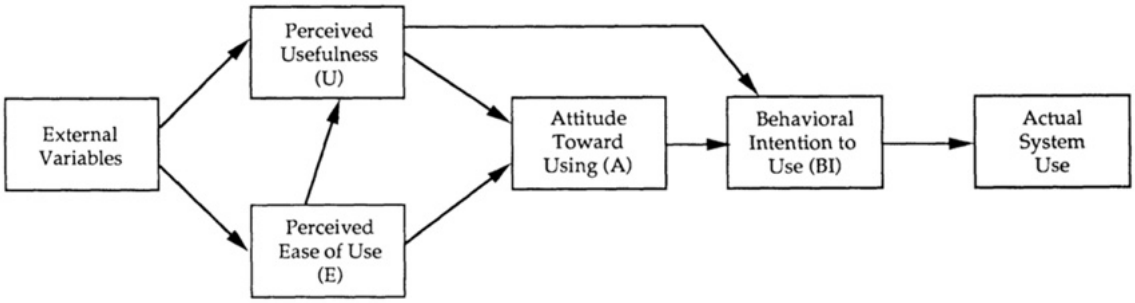


Figure 6. Technology Acceptance Model (TAM) (Lee et al., 2025, adapted from Davis, 1989).

The application of the TAM reveals several key relationships: U demonstrates a strong positive effect on Intention and Use (Davis, 1989; Scherer et al., 2019), while E positively influences both U and Intention/Attitude, though the latter relationship can sometimes be weaker or mixed (Davis, 1989; Scherer et al., 2019). Additionally, Intention consistently exhibits a positive effect on Use (Scherer et al., 2019). These patterns hold in the context of education, where U and E reliably predict intention and usage behaviours (Scherer et al., 2019).

Extensions of TAM frequently also incorporate pre-existing factors that influence PU and PEOU (Lee et al., 2025). Venkatesh & Davis (1996) identified individual-level antecedents of E, namely computer self-efficacy and objective usability, and demonstrated that E perceptions are anchored to self-efficacy even before direct system experience. Broader individual traits, such as technology discomfort and perceived risk, as well as social and contextual factors like trust, enjoyment, and curiosity, have been incorporated into later TAM extensions (Lee et al., 2025). In organisational settings, particularly healthcare and education, factors such as organisational support, training, and readiness further shape U and E (Lee et al., 2025).

While TAM is valued for its simplicity and robustness, it has been criticised for overlooking critical context-specific and structural factors such as organisational constraints and cultural influences (Lee et al., 2025). This oversight can limit its applicability in environments where these elements play a decisive role in technology adoption.

Another major critique is that TAM can oversimplify complex settings, particularly in fields such as healthcare, where factors such as training, trust, and organisational support significantly influence actual use beyond mere intention (Lee et al., 2025). While TAM effectively explains technology use through perceived usefulness and ease of use, shaping attitudes, intentions, and ultimately behaviour, its broad validation often requires integrating additional variables (e.g., trust, support) to fully account for real-world adoption dynamics.

2.1.2. Unified Theory of Acceptance and Use of Technology

The UTAUT model, developed over two decades ago, has been widely applied across diverse fields to explain technology adoption and usage. It is a more complex framework than TAM, combining eight earlier acceptance models into a single unified model, and has been applied in fields such as education, healthcare, transport, and consumer technology (Venkatesh et al., 2003). Its applicability to specific domains, including digital health interventions, has since been empirically validated and extended (Lee et al., 2025; Philippi et al., 2021).

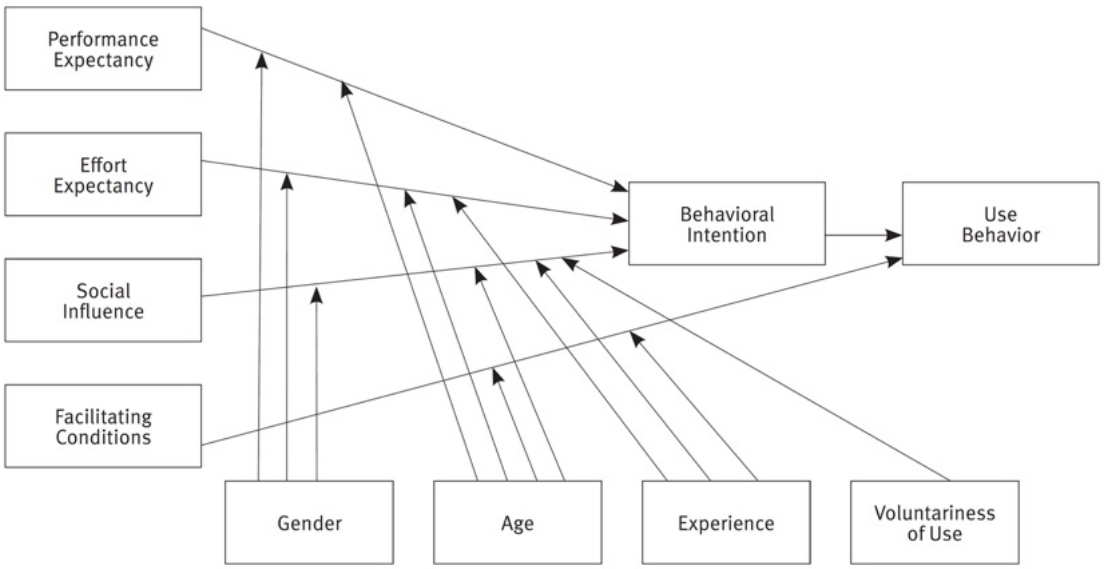


Figure 7. Unified Theory of Acceptance and Use of Technology (UTAUT) Model (Venkatesh et al., 2003).

In the UTAUT, behavioural intention to use a technology is identified as the primary direct predictor of actual usage, see Figure 7 (Venkatesh et al., 2003). This intention is shaped by four key constructs: (1) Performance Expectancy: the users' beliefs about a technology's ability to enhance their performance, and the strongest and most consistent predictor of

intention; (2) Effort Expectancy: the perceived ease of using the technology; (3) Social Influence: perceived social pressure or encouragement to adopt the technology, whose effect varies by context; and (4) Facilitating Conditions: the perceived availability of support, infrastructure, and resources, also context-dependent (Venkatesh et al., 2003). In digital health settings specifically, Performance Expectancy has been confirmed as the most important determinant of acceptance, while internet anxiety has been found to moderate the effects of Social Influence and Effort Expectancy (Philippi et al., 2021). The original UTAUT model also incorporates moderators: age, gender, experience, and voluntariness of use, which can amplify or diminish the impact of these core constructs (Venkatesh et al., 2003).

In its original validations, the UTAUT accounted for approximately 70% of the variance in behavioural intention and around 50% in actual use, demonstrating superior explanatory power compared to earlier models (Venkatesh et al., 2003). In the specific context of digital health interventions, the adapted UTAUT model has demonstrated particularly strong explanatory power, accounting for over 80% of the variance in acceptance (Philippi et al., 2021).

UTAUT is widely recognised for its strong predictive power and for its comprehensive set of determinants of technology acceptance (Venkatesh et al., 2003). However, it has faced critiques including model complexity, which can make application less straightforward, and a recognised need for context-sensitive adaptations, particularly in diverse cultural settings, specific sectors such as healthcare, and in developing countries (Lee et al., 2025; Philippi et al., 2021). Several studies have therefore extended UTAUT by integrating context-specific factors, such as trust, perceived risk, and internet anxiety, particularly in domains such as digital health and wearable devices (Lee et al., 2025; Philippi et al., 2021).

The UTAUT interprets technology adoption through the lens of performance benefits, perceived ease, social influences, and organisational support, with behavioural intention serving as the primary driver of actual usage. While the model demonstrates strong predictive capabilities, it frequently requires extensions or contextual adjustments, such as incorporating factors like trust, perceived risk, or internet anxiety, to effectively address the nuances of specific technologies and healthcare environments (Lee et al., 2025; Philippi et al., 2021).

2.2. Teachers in the Blended Learning System

Teachers are defined as the main users in this study. Many factors influence how they teach and choose learning materials and approaches. To understand what makes them tick, their professional competencies, barriers, motivators, and blended learning design-reality gaps were discovered and described.

2.2.1. Professional Competencies in Blended Learning Pedagogy

The most effective teachers are not defined by a single characteristic but rather by a composition of professional expertise, personal attributes, and teaching methods that enhance learning, motivation, and student well-being. Key professional competencies include: expertise, classroom management, and instruction (Burroughs et al., 2019; Fauth et al., 2019).

Pedagogical and subject-matter expertise enables teachers to clarify complex concepts and tailor their instruction to meet students' needs (Burroughs et al., 2019; Emslander et al., 2025; Fauth et al., 2019). Effective classroom management is about maintaining structure, focus, and productivity and is consistently associated with improved academic performance and student engagement (Fauth et al., 2019). Clear instruction and cognitive activation, such as posing challenging questions and emphasising comprehension over simple memorisation, foster deeper learning and motivation (Burroughs et al., 2019; Fauth et al., 2019; Gilbert et al., 2023).

Examples of key classroom practices and teacher behaviour linked to effectiveness are summarised in Table 6. Effective teaching relies on several central practices that directly benefit students. Clear explanations and goals enhance understanding and academic achievement (Burroughs et al., 2019; Gilbert et al., 2023). Using varied methods and materials keeps students engaged and interested (Gilbert et al., 2023). A supportive classroom climate characterised by positive teacher-student interactions and emotional encouragement is consistently linked to improved student motivation and interest (Fauth et al., 2019). Finally, maximising time on task and content coverage ensures that students make steady academic progress (Burroughs et al., 2019).

Research highlights that effective teaching is deeply influenced by psychological and relational traits. Teachers with high self-efficacy, confidence in their ability to teach, tend to deliver higher-quality instruction, which in turn boosts student achievement and motivation

(Bardach et al., 2021; Burroughs et al., 2019; Fauth et al., 2019). Enthusiasm for teaching contributes to a positive classroom climate, stronger discipline, and increased student interest (Bardach et al., 2021; Fauth et al., 2019; Gilbert et al., 2023). Additionally, emotional intelligence and regulation help create supportive environments and improve classroom management (Bardach et al., 2021; Emslander et al., 2025). Studies also show that warm, supportive teacher-student relationships are strongly correlated with higher achievement, motivation, positive behaviour, and overall well-being among millions of students (Emslander et al., 2025). Finally, personality traits such as conscientiousness and extraversion are linked to better learning support and classroom discipline (Bardach et al., 2021).

Teachers who embrace lifelong learning and continuous professional development are better equipped to refine their teaching methods and maintain effectiveness throughout their careers (Burroughs et al., 2019). Additionally, cultural competence and an understanding of students' diverse backgrounds foster equity and engagement, creating inclusive learning environments (Emslander et al., 2025).

To sum up, effective teaching combines deep subject-matter expertise and pedagogical skills with good classroom management, clear and engaging instruction, and supportive relationships. These qualities, along with confidence, enthusiasm, emotional intelligence, and a commitment to professional growth, significantly enhance a teacher's ability to positively influence student achievement, motivation, and overall well-being.

2.2.2. Educational Platforms and Engagement

Digital platforms are now central to teaching, but teacher engagement with them depends as much on support, usability, and workload as on pure functionality. Studies in this area span LMSs, AI-based adaptive systems, and online teaching tools, with a strong focus on teachers' attitudes and readiness (Berková et al., 2024; Cukurova et al., 2023; Khong et al., 2022; Zou et al., 2025).

To support teaching and interaction, platforms usually give flexible access, personalisation, monitoring, and rich resources, while enabling forums, chats, and shared spaces for collaboration, and LMSs and online tools can foster teacher presence, feedback, and active learning, which strengthens engagement and autonomy in students (Zou et al., 2025).

Interactive activities and tools (quizzes, collaborative spaces) increase teacher–student interaction and student engagement online (Zou et al., 2025).

Several key factors influence the teachers' engagement. Perceived usefulness and ease of use are the most significant predictors of satisfaction and sustained adoption, as users are more likely to continue using platforms they find practical and intuitive (Khong et al., 2022). Additionally, positive attitudes, self-efficacy, and digital literacy play a crucial role, as confidence and familiarity with technology correlate with greater readiness and favourable perceptions of online teaching (Khong et al., 2022). Institutional training and support further enhance engagement by improving teachers' technological, pedagogical, and content knowledge, reinforcing the perceived value of these tools, and encouraging their adoption (Cukurova et al., 2023; Khong et al., 2022). Finally, workload and alignment with existing teaching practices are critical, like low additional effort, compatibility with current methods, and adequate orchestration support, to ensure smoother integration and higher engagement (Cukurova et al., 2023).

Teachers' satisfaction and emotional well-being in online teaching are closely tied to what the tools allow them to do: positive experiences arise when platforms support explaining content, activating students, assigning written work, and sharing resources, while significant challenges and associated negative feelings emerge around oral examinations and the integration of homework into distance education (Berková et al., 2024). Satisfaction arises when tools support explaining, activating students, assigning work, and sharing resources; challenges arise with tasks such as oral exams and integrating homework (Berková et al., 2024). Teachers' adoption is also shaped by ethical considerations around AI platforms, including concerns about transparency and the minimisation of potential harms (Cukurova et al., 2023).

Teacher influences on student engagement through educational technology are visualised in Figure 8 (next page). Strong student-teacher relationships that are built on trust, knowledge, and support foster engagement. Teachers use technology more effectively when confident in their skills, which requires ongoing professional development. Clear, constructive feedback, humour, and encouragement further boost engagement, while question-based feedback promotes deeper reflection. Proactive communication and follow-up also enhance student involvement (Bond & Bedenlier, 2019).

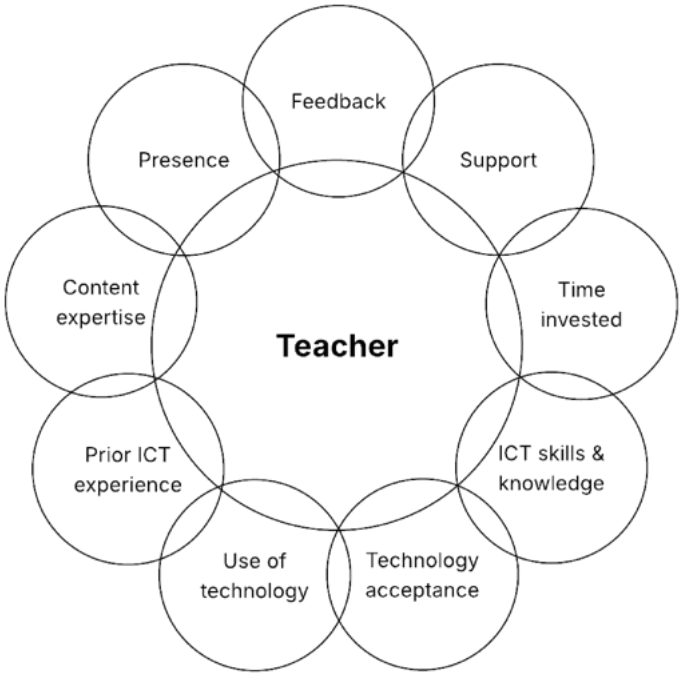


Figure 8. Teacher Influences on Student Engagement (Bond & Bedenlier, 2019).

Educational platforms can enhance interaction, personalisation, and monitoring, but teacher engagement depends heavily on perceived usefulness, ease of use, low extra workload, strong institutional support, and trust. Where these conditions are met, teachers show more positive attitudes, higher readiness, and greater sustained use of digital platforms in their practice, which also enhances student involvement.

2.2.3. Barriers

Barriers and motivation play a crucial role in teachers' acceptance of the blended learning model, both in schools and HEIs. Educators, together with the institutions, are finding their own way between these two forces. A summary of these forces is displayed in Figure 9 (next page).

To accept blended learning, teachers face barriers such as resistance, low self-efficacy, high workload, lack of policy, and low institutional readiness, which reduce adoption and sustainable use (Ali, 2024; Porter & Graham, 2016). Although these factors may apply broadly to technology adoption, they can also be meaningfully related to blended learning to identify the typical challenges that teachers face when implementing it at the institutional level (Ali, 2024).

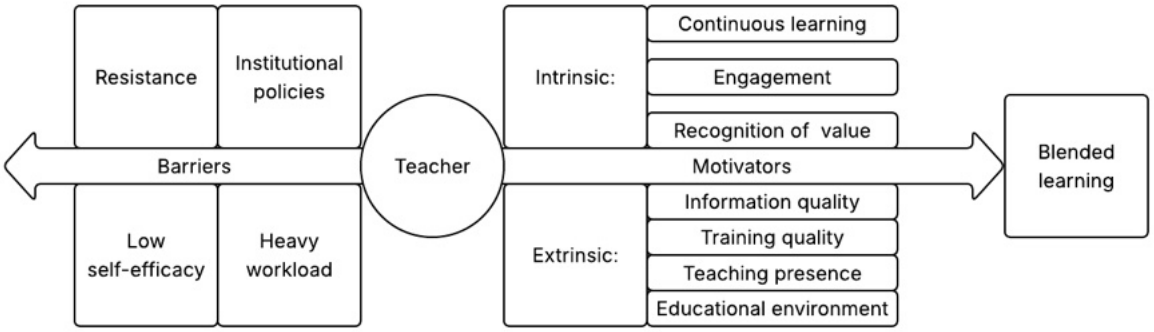


Figure 9. Barriers and Motivators for Implementing Blended Learning in the Classroom; authors' work (Ali, 2024; Dahri et al., 2024; Ibrahim & Nat, 2019; Porter & Graham, 2016).

In a meta-study, Ali R. (2024) has summarised research indicating that resistance significantly influences teachers' decisions regarding the adoption of online and blended learning approaches, both at the school level and within HEI structures.

Low self-efficacy among teachers can impact their decisions about integrating technology into teaching. Self-efficacy is a key factor in shaping instructional practices and influences teachers' willingness to adopt technology. Essentially, teachers are less likely to embrace new methods unless they believe they can succeed and manage potential risks (Ali, 2024).

Teachers' heavy academic workload can hinder technology adoption. Blended learning often requires extra time for resource development and upskilling, especially for those used to traditional methods. This increases their workload, preparing materials and learning new tools, compared to face-to-face teaching, adding pressure and potentially fostering resistance. Studies confirm that workload significantly affects the adoption of online and blended learning (Ali, 2024).

Institutional policies on resources and professional development greatly impact teachers' technology adoption. Inadequate professional development can impede technology-enhanced learning, posing a significant barrier to implementation in both school and higher education contexts (Ali, 2024; Porter & Graham, 2016). Supportive institutional policies are essential for effective blended learning, providing the necessary infrastructure, pedagogical, and technological support (Porter & Graham, 2016). Without consistent institutional readiness, technology use across disciplines remains uneven and unsustainable (Ali, 2024; Porter & Graham, 2016).

The barriers discussed earlier must be addressed to raise the acceptance level of blended learning practices. Understanding the common challenges teachers face in adopting technology-enhanced learning, particularly blended learning, is essential to provide better support and ensure consistent learning experiences for students as well.

2.2.4. Motivators

Motivators help teachers to adopt blended learning and work in the opposite direction from the barriers, as explained in Figure 9. Motivational models for blended learning in teacher development highlight intrinsic and extrinsic motivators, with up to 65% of adoption explained by such factors (Dahri et al., 2024), collectively shaping instructors' motivation to adopt blended learning approaches. Intrinsic factors originate from teachers' personal cognition, such as their instructional philosophy and mental models formed through reflection and experience (Dahri et al., 2024). External influences, however, involve cultural, structural, or instructional elements (Ibrahim & Nat, 2019).

Teachers' intrinsic motivation to adopt blended learning is driven by engagement, continuous learning, and recognition of its value (or perceived usefulness). Engaged teachers actively participate in the learning process, interact with students, and invest in skill development, fostering a dynamic environment and enhancing motivation (Ibrahim & Nat, 2019). Commitment to professional growth further strengthens this drive, as teachers who pursue ongoing development are more likely to embrace innovative methods like blended learning (Dahri et al., 2024). Additionally, when educators understand the benefits of blended learning, their internal motivation to integrate it into their teaching practices increases, rooted in its potential to enrich educational experiences for both teachers and students (Ibrahim & Nat, 2019).

Extrinsic motivators for adopting blended learning include information quality (and efficiency), training quality (professional support, technical assistance), teaching presence, and the educational environment (funding, preparation time, institutional infrastructure, senior staff involvement). High-quality, relevant, and well-organised content boosts teachers' confidence in blended learning (Ibrahim & Nat, 2019). Supportive colleagues, senior staff involvement, and collaborative environments further encourage adoption (Ibrahim & Nat, 2019). Additionally, a well-equipped educational environment with strong

infrastructure, technological support, and a positive organisational culture motivates instructors to explore blended learning (Dahri et al., 2024).

Understanding the interplay between these extrinsic and intrinsic factors helps institutions foster an environment that sustains teachers' motivation to adopt blended learning, ultimately improving educational quality.

2.2.5. Nudging Teachers Toward Digital Tools

Getting teachers to embrace digital tools isn't about pushing them into change. It's about removing obstacles, boosting their confidence, and showing how tech can actually help them achieve their own goals. Studies show that thoughtful training, supportive leadership, and gentle, autonomy-respecting encouragement can really shift both mindsets and daily habits. In this case, it shows how motivators can be turned into practical nudges.

Research shows that teachers are more likely to adopt digital tools when they see clear benefits for their teaching and student learning, and when the tools feel easy to use (Khong et al., 2022). Hands-on workshops can boost confidence, reduce anxiety, and highlight the value of these tools (Reinhold et al., 2021). Seeing role models demonstrate practical, applicable digital practices in training can also motivate educators to reassess their own skills and explore new formats (Lüken-Klaßen & Kötting, 2024).

Gentle "nudges" can effectively encourage teachers to use digital tools. Short, practical training sessions with ready-to-use ideas spark intrinsic motivation and demonstrate that digital integration is achievable (Lüken-Klaßen & Kötting, 2024).

Schools and systems can foster digital teaching by ensuring strong leadership and infrastructure. Principals who invest in reliable internet, devices, and structured professional development, while encouraging collaboration and peer mentoring, help make digital teaching the norm (Mushadi et al., 2025). Policies that support autonomy, allowing teachers to choose tools that align with their teaching style rather than enforcing a single platform, boost motivation and persistence (Chiu, 2022). Additionally, ongoing support, such as technical staff, guides, and repeated training, makes teachers more likely to see digital tools as useful and continue using them (Khong et al., 2022).

The most effective approach doesn't just provide access to digital tools. It ensures teachers see them as useful, manageable, and aligned with their professional goals. This means using gentle "nudges" that respect autonomy, offer practical examples, reduce fear through hands-on practice and peer support, and are backed by strong leadership, time, and infrastructure.

2.2.6. Design-reality Gaps

While blended learning is often marketed as flexible, interactive, and student-centred, research frequently reveals a disconnect between these ideals and their implementation in practice. This 'design-reality gap' is evident in how flexibility, interaction, equity, and pedagogical approaches are actually applied in practice. An affordance theory study on an open e-learning platform identifies seven key affordances (informing, assessment, learning pathways, goal planning, etc.) and shows how misalignment between these and diverse user goals creates design–reality gaps and high dropout (McCarthy et al., 2021).

A persistent gap exists between the intended design of blended learning and its actual implementation. While flexibility and learner control are central goals, few courses grant students real autonomy over how, when, or where they learn (Müller et al., 2023). Interaction, though emphasised in design guidelines, is often limited to superficial face-to-face sessions or basic online monitoring, with only the most effective courses incorporating activating tasks, strong teacher presence, and timely feedback (Müller et al., 2023).

The promise of student-centred and inclusive blended learning also falls short in practice. The gap between blended learning's student-centred ideals and its actual implementation is reflected in inconsistent course design, with some instructors struggling to move beyond teacher-centred approaches, and variability in design quality leading to uneven learning experiences across courses (Ali, 2024; Müller et al., 2023). Equity and inclusion, while central to blended learning's appeal, are not guaranteed; disparities in digital literacy, technology access, and support can widen existing gaps (Ali, 2024). Students often struggle with unclear participation norms (Müller et al., 2023) and may expect more active teacher involvement than the design assumes.

Instructors face their own challenges, including increased workloads, design complexity, and insufficient institutional support, leading to inconsistent implementation (Ali, 2024). Technological integration further complicates matters, as tools are often added without clear

pedagogical alignment, undermining immersive or inclusive design aims (McCarthy et al., 2021; Porter & Graham, 2016).

The literature points to three key factors shaping how effectively teachers adopt and use digital learning platforms: the usability of the platform itself, the availability of ongoing training and support, and the degree to which the platform is designed inclusively to accommodate diverse users (McCarthy et al., 2021; Ali, 2024; Porter & Graham, 2016; Seale et al., 2020). First, Platform UX highlights the need for platforms to offer intuitively structured tools and navigable interfaces that reduce friction in teachers' day-to-day instructional practice (McCarthy et al., 2021). Second, Teacher Support underscores that educators require sustained, institution-level provision of both technical assistance and pedagogically focused training in order to integrate digital platforms with confidence and competence (Ali, 2024; Porter & Graham, 2016). Finally, Inclusive Design recognises that digital learning environments must be built around established accessibility frameworks and guidelines that proactively address the varied needs, abilities, and interaction preferences of all users, ensuring equitable participation across diverse learner and educator populations (Seale et al., 2020). Taken together, attention to user experience, structured support provision, and accessibility-centred design constitute a coherent institutional approach to deepening teacher engagement with, and effectiveness within, digital learning ecosystems.

In various settings, blended learning is typically designed with high aspirations but executed with restricted learner autonomy, inconsistent interaction, unequal access, and limited instructor resources. When core design principles, such as clear structure, active learning tasks, strong social presence, and inclusive strategies, are faithfully applied, both outcomes and student experiences are enhanced; otherwise, the gap between design and reality persists.

2.3. Service Design and its elements in education contexts

TAM and UTAUT explain what drives adoption, but they are diagnostic frameworks, and they do not tell you how to design a better service. Service design fills that gap. It draws on diagnostic insights from technology acceptance research and translates them into actionable interventions through methods such as blueprinting and co-creation.

Service design (SD) is a human-centred approach that enables organisations to evaluate and improve their services from the customer’s perspective. Grounded in design thinking, it seeks to align business objectives with customer needs in order to deliver coherent, high-

quality service experiences. By employing collaborative methods involving both end users and service delivery staff, SD fosters a comprehensive understanding of the service journey, thereby facilitating meaningful and systemic improvements (Stickdorn et al., 2018).

SD in education is an emerging but growing area. There is increasing work on service design in education, especially in higher education, though it is still described as relatively neglected and unevenly developed when compared to other fields (Carvalho & Goodyear, 2017). SD in education is an active yet consolidating field, with the strongest development in higher education pedagogy, institutional management, and specific innovations such as ITSs, maker education, and digital teaching platforms (Joshi & Alavaikko, 2020).

There are three main directions usually explored in the SD in the field of education: 1) Education as a service and learning networks where students, teachers, technologies, and institutions form service systems and value co-creation (Carvalho & Goodyear, 2017); 2) SD in HEIs from designing courses, tailoring education experience to specific groups and learning outside formal education (Joshi & Alavaikko, 2020); 3) And institutional and managerial applications helping redesign student and staff experiences and processes (Wolfe, 2020).

Different tools and concepts can be used in the service design approach, such as touchpoints, service journeys, service gaps, the service blueprint, and more. SD and service blueprinting have been used to design educational platforms and project-based teaching ecosystems, revealing service gaps, mapping stakeholder journeys, and generating systemic platform concepts (Stickdorn et al., 2018; Wemmenhove et al., 2025). A service design case on an intelligent tutoring system shows that co-creative blueprinting with students, teachers, and developers leads to improvements in onboarding, feedback, and course embedding (Wemmenhove et al., 2025).

2.4. Research gaps and emerging themes

The broader landscape of blended, hybrid, immersive, and analytics-supported learning environments is expanding at a considerable pace. Yet the evidence base underpinning these developments remains uneven: long-term impact, equity considerations, and pedagogical outcomes continue to lag behind technological innovation. Existing research is disproportionately concentrated in HEIs and technologically developed countries, leaving

primary and secondary school contexts, as well as smaller national education systems, substantially underrepresented.

Several interconnected gaps characterise the current state of the field. First, most blended learning research targets university-level students in well-resourced settings, with persistent calls for greater attention to school-level and developing-country contexts (Ashraf et al., 2021). Second, the affective dimensions of blended learning, including students' emotional engagement, sense of belonging, and the quality of teacher-student relationships, have received comparatively less empirical attention than behavioural or cognitive outcomes, despite evidence that they play a significant role in how students experience and persist in blended courses (Heilporn et al., 2021). And third, critically for the present study, research on teachers' technology acceptance has remained underspecified, often examining general attitudes toward educational technology rather than intentions tied to particular platforms or pedagogical purposes, while teacher professional development and digital competencies for blended learning continue to be identified as priorities that the existing literature has yet to adequately address (Ashraf et al., 2021; Kahnbach et al., 2024).

Alongside these gaps, several emerging thematic strands are shaping current research directions. The evolution of blended learning is increasingly bound to developments in information and communication technologies, with growing attention to how adaptive systems, intelligent tools, and evolving platform capabilities reconfigure teaching and learning environments (Dziuban et al., 2018). Parallel questions around platform usability, the systemic quality of learning management systems, and how effectively these tools support differentiated instruction are receiving increasing scrutiny (Dziuban et al., 2018; Kahnbach et al., 2024). At the same time, researchers are calling for broader geographical and institutional diversity in blended learning studies, with particular attention to how ICT infrastructure and teacher competencies shape adoption across different contexts (Ashraf et al., 2021). The affective and relational dimensions of blended environments, such as how course structure, pacing, and teacher presence shape students' emotional and cognitive engagement, are also emerging as a distinct area of inquiry (Heilporn et al., 2021).

Across these strands, the directions most consistently recommended by researchers converge on three priorities: broader, more diverse, and longitudinal samples; more robust theoretical frameworks specific to blended and immersive contexts; and systematic investment in

teacher training, co-design processes, and institutional support structures for sustainable implementation (Ashraf et al., 2021).

These recommendations highlight the specific gap addressed by this thesis. Despite a substantial body of research on how students interact with educational platforms, their engagement levels, motivations, and learning outcomes, the teacher side of this relationship has received far less attention. Few studies have specifically examined teachers' strategies for promoting student engagement in blended contexts, and even fewer have examined teachers' engagement with the platforms themselves (Heilporn et al., 2021). While technology acceptance among educators has been a productive area of inquiry, much of this work examines general attitudes toward educational technology rather than teachers' intentions to use a specific platform for a defined pedagogical purpose. The factors shaping those intentions may differ substantially depending on the technology in question, yet such specification is frequently absent or underspecified in the literature (Kahnbach et al., 2024).

This gap becomes more acute when contextual factors are taken into account. The majority of foundational blended learning research has emerged from large, English-speaking or Western European university settings, with a particular concentration in large US research institutions focused on student success rates, withdrawal patterns, and perceptions of course quality (Dziuban et al., 2018). Very little research examines how teachers engage with blended learning platforms in small-country, single-language contexts: the settings where national education reform agendas directly govern what content is available, in what sequence, and to what end.

Latvia represents precisely such a context. Its national curriculum, platform ecosystem, and teacher community are uniquely and tightly interlinked in ways that have no direct parallel in larger, more pluralistic education markets. Teacher engagement with any given platform in this setting is not simply a matter of individual technology acceptance; it is shaped by institutional mandates, curricular alignment, and the social dynamics of a relatively small professional community. // This thesis addresses that gap directly. It investigates why teachers who have access to a comprehensive blended learning platform use it differently, some extensively, some selectively, and some barely at all, and what service design interventions might help reduce the distance between what the platform offers and what teachers actually engage with in practice.

3. RESEARCH DESIGN

This chapter establishes the philosophical and strategic foundation for this research and outlines how to answer the RQs. This is the "big picture" of how the research was conducted, focusing on the why and what of the research design choices.

3.1. Approach and strategy

To explain different theoretical parameters of the study, the Research Onion framework was used. It helps quickly grasp the theoretical and strategic foundation of the study and serves as a visual representation of the research philosophy, approach, strategy, and methods (Saunders et al., 2019). For a visual representation of the Research Onion model for this study, see Figure 10.

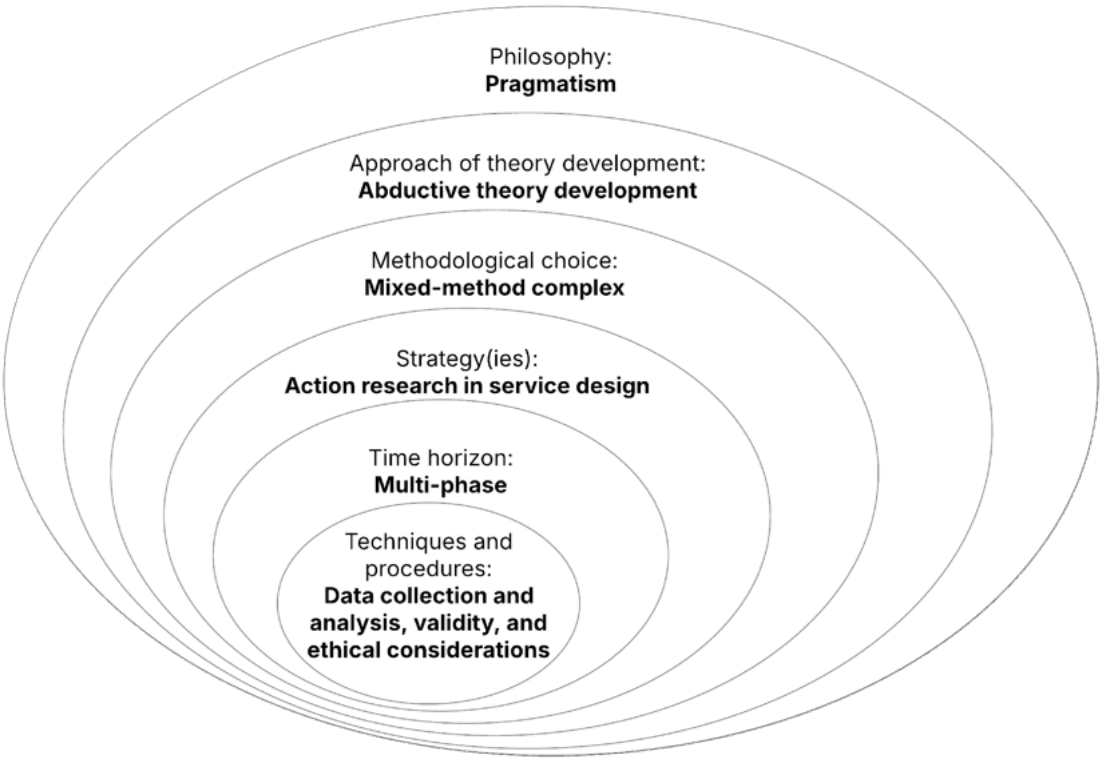


Figure 10. Research Onion Framework (Saunders et al., 2019), adapted for this research.

Research philosophy was defined as pragmatism. The focus of this research is on observable phenomena, with a practical, applied approach to improving an existing teaching ecosystem. In keeping with a pragmatist philosophy, data interpretation drew on multiple perspectives,

those of the researcher, the industry partner, and the primary users, reflecting pragmatism's acceptance that knowledge is shaped by the values and standpoints of those involved in the research process (Saunders et al., 2019).

Abductive theory development is the research approach used in this study. It offers a middle ground between induction and deduction, starting with an observation and then seeking the best explanation for it (Saunders et al., 2019). In this study, it started with the industry partner's perspective, then the researcher's and the teachers', to explain and support with existing research and expert perspectives. As some of the research results were updated as the study progressed, it was iterative: data gathering helped investigate a phenomenon, uncover themes and patterns, place them within a conceptual framework, and validate this framework through further data collection, repeating the process as needed (Saunders et al., 2019).

This study employs a complex mixed-methods approach, integrating both qualitative and quantitative data collection across several phases, multiple levels of data (industry partner, researcher, teachers, experts), and multiple stages (iteration stages) (Creswell & Plano Clark, 2018). It was planned to be an intense research in a relatively short timeframe, effectively capturing a snapshot of the investigated phenomenon (Saunders et al., 2019). The rationale for adopting this methodology lies in its ability to address the complexity of the research questions. While quantitative methods provide measurable, generalizable insights, qualitative methods enable in-depth exploration of underlying themes, motivations, and contextual nuances. By combining these approaches, the research triangulated findings, ensuring both depth and breadth in addressing the research objectives. This alignment ensures a comprehensive understanding that neither method could achieve on its own (Saunders et al., 2019).

This is an action research. The research process was closely tied to implementing solutions for real-world problems (usage of the teaching ecosystem in this thesis) and involved the affected stakeholders (teachers and the industry partner) as active participants, aiming to achieve both change and the creation of new knowledge (Bradbury-Huang, 2010).

This study adopts a multi-phase time horizon, with iterative data-gathering phases spanning from February to April 2026. Rather than tracking change over an extended period, the phases were designed to build sequentially on one another within a defined and bounded

timeframe, with each phase informing the next (Creswell & Plano Clark, 2018). This approach is consistent with complex mixed methods designs in which multiple rounds of data collection are conducted within a single study window to address different aspects of the research questions, rather than to observe change over time (Creswell & Plano Clark, 2018; Saunders et al., 2019).

Under the Research Onion layer of techniques and procedures, information about the data collection and data analysis should be explained. For example, this study included semi-structured interviews, an autoethnographic study, a co-creation workshop, and the creation of service blueprints and proposals. The details are laid out in the next sub-chapter, *3.3. Research methodology, data collection, and analysis* in more detail. Data triangulation is explained in sub-chapter *3.4. Validity* and responsible conduct of research in sub-chapter *3.5. Ethical considerations*.

3.2. Service Design framework

While the Research Onion describes the academic logic of this study, the Double Diamond describes its design practice logic. In this research, the two are deliberately aligned. The four phases of the Double Diamond shaped the structure of this research from start to finish.

The Double Diamond was chosen as the organising framework for this research, not simply because it is familiar in service design practice, but also because it was designed for exactly the kind of problem this thesis investigates: one where the gap is visible but its causes are not yet understood (Stickdorn et al., 2018). This alignment between the research approach and the service design framework is intentional. It reflects the core service design argument that you cannot design a better service without first genuinely understanding the experience of the people who use it.

The Discover phase opened with broad exploration: a review of the literature on blended learning and teacher technology acceptance, a semi-structured interview with the industry partner's Project Director, an autoethnographic engagement with the platform itself, and insights from the workshop with teachers. The Define phase drew these threads together through service blueprinting and a stakeholders map, which made the systemic gaps in the teacher experience visible, and converged on the central design challenge: why teachers who have access to a comprehensive platform engage with it so differently, and what could be done about it.

The second diamond shifted the focus from understanding the problem to designing responses. The Develop phase used a co-creation workshop with seven secondary school teachers to generate, discuss, and evaluate design proposals, followed by a prioritisation matrix that filtered ideas by importance and feasibility. The Deliver phase consisted of two expert validation interviews, which tested and refined the proposals against external experience from educational platform development, and a final presentation to the industry partner, translating the research outcomes into concrete recommendations for platform development and alignment with their future goals. Visual representation of the Double Diamond for this research is in Figure 11.

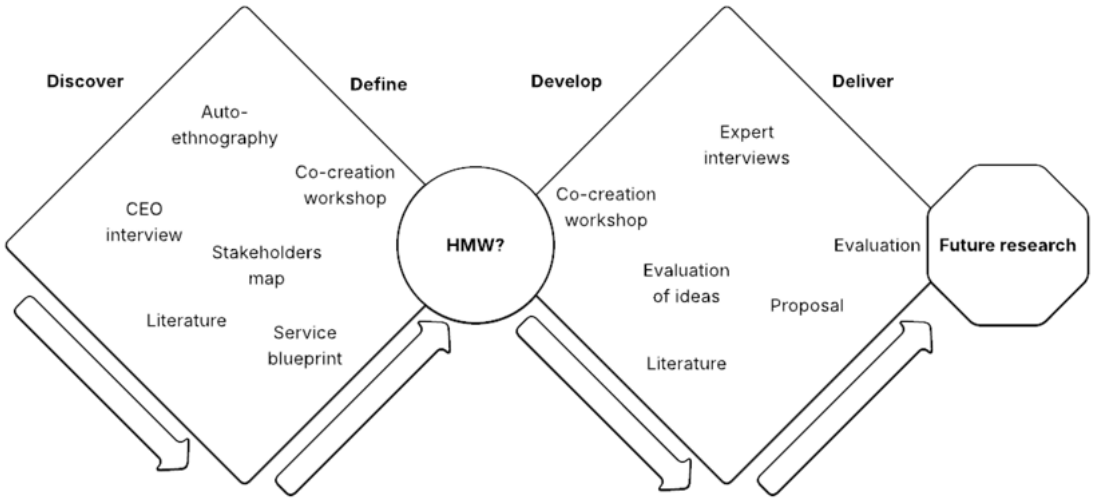


Figure 11. Double Diamond Research Process Model (Stickdorn et al., 2018), adapted for this research.

The service design framework served as the primary approach for planning and executing the research. The Double Diamond illustrates the iterative process of problem exploration and solution development, aligning with this research strategy and approach. It clarifies how the researcher moved from broad discovery to focused delivery (Stickdorn et al., 2018).

3.3. Research Methodology, Data collection, and Analysis

This chapter covers the practicalities of research in the publishing and education, EdTech industries: it details the specific methods and tools used for data collection and analysis, justifies these methods, and focuses on how to answer the RQs formulated earlier.

3.3.1. Overview

The research employs a complex mixed-methods approach, combining qualitative interviews with the industry partner, an autoethnographic study, a co-creation workshop with the main users, the teachers, and in-depth validation interviews with experts from the education field with experience in school-level educational platform development, maintenance, a quantitative approach in the evaluation of the proposed updates, and upgrading after iterations in different stages of the research. Before data collection, the research began with an initial meeting with the industry partner and a literature review to build a theoretical foundation, understand current trends in educational technology and service design, and set the RQs.

Then a more hands-on part began. To see the steps that were taken, please see Figure 12 (next page). The timeline outlines the sequential steps for gathering and analysing data, clarifying the practical, step-by-step execution of methods and ensuring reproducibility, and indicating which RQs correspond to which part of the research.

To sum up, data was collected through semi-structured interviews, autoethnography, co-creation workshop and quantitative and qualitative evaluation of the ideas targeting: (1) The industry partner Project Director to assess the company's strategies, needs and possibilities, (2) Teachers to capture pedagogical perspectives and practical insights, and (3) The experts to provide specialised knowledge and external validation. Also, the author of the research contributed with an autoethnographic study of the industry partner's books and digital platform to better familiarise with the tools, services and language used to describe its parts.

The data collection for the research began with a semi-structured interview with the industry partner's Project Director in February 2026. After that, the industry partner's challenges were summarised. An autoethnographic study was conducted to explore the industry partner's teaching ecosystem, and a service blueprint and a stakeholders map were then created. Next steps included a co-creation workshop with teachers in March 2026, where they identified what they know and like about existing tools, products and services of the industry partner, as well as pinned down the pain points and proposed various solutions to make the industry partner's teaching ecosystem better and more useful for their everyday usage. The proposed solutions were then evaluated quantitatively by the Project Director himself at the end of

March 2026 and by experts working with educational platforms in April 2026, and were also aligned with the published research on the topic.

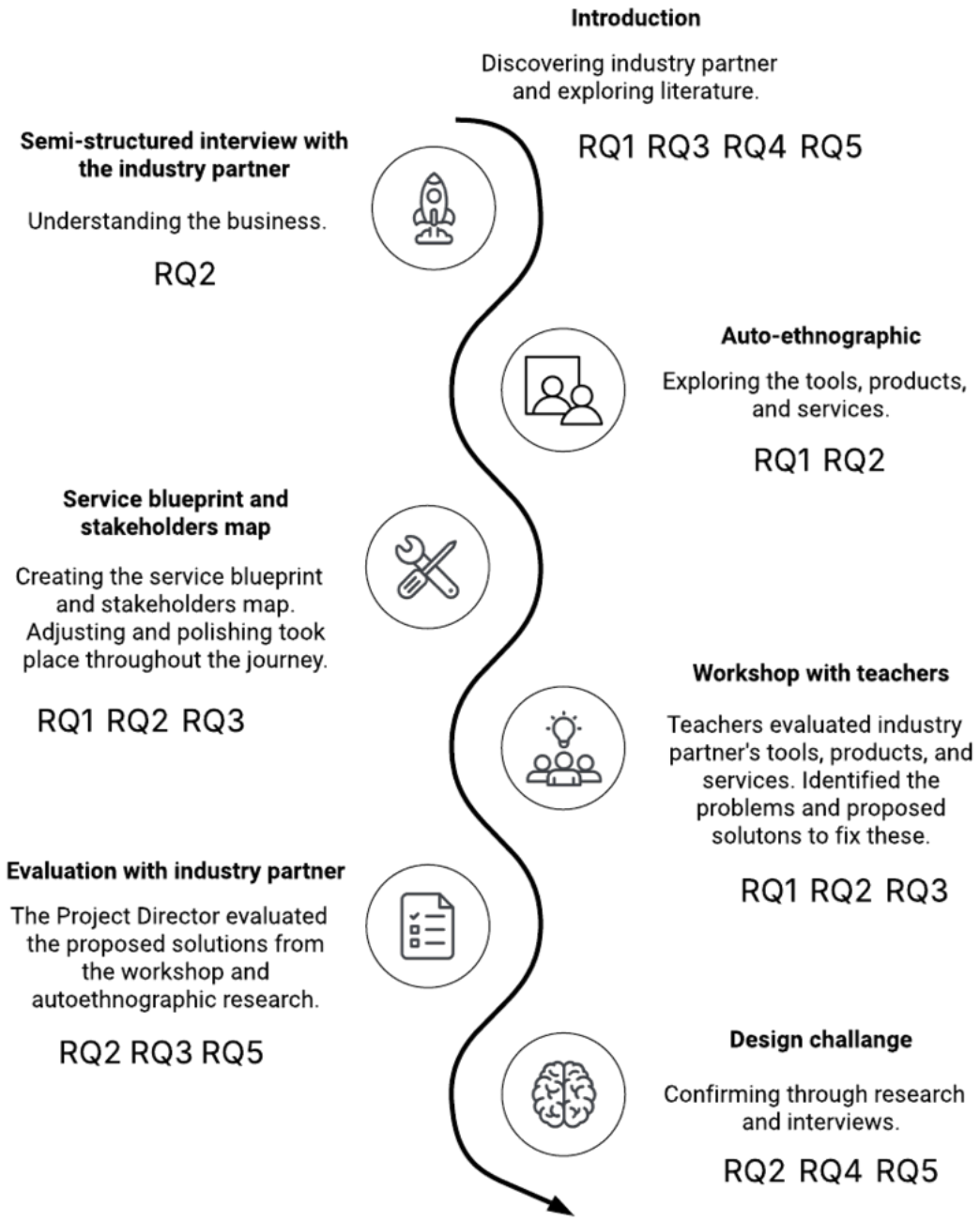


Figure 12. Data Collection and Analysis Timeline.

Qualitative data from all interviews, an autoethnographical study and co-creation workshops were thematically analysed. Quantitative data on teacher-level engagement and evaluation

of the proposed ideas were analysed. The mixed-methods approach ensures a comprehensive understanding of the intersection between educational practices and industry collaboration.

In the next sub-chapters, the specific methods for the data collection and analysis are described.

3.3.2. Participants

The research directly involved 11 people, all of whom were connected to the field of education. Table 3 outlines research participants. It ensures transparency about who contributed to the data and why their inclusion was methodologically relevant.

Table 3. Participant Overview.

Involved in the research	n	Relevance and description of group
Project Director	1	Managing the industry partner. Makes main decisions on what happens with the products and services.
Autoethnographic	1	The author of the research. This experience is relevant because of close to 15 years of experience in the field of education in various roles.
Teachers	7	Defined as the main users. Are the gatekeepers for the students by deciding the methods and teaching materials to be used in the learning process.
Education platform experts	2	They have experience for innovations and upgrades of the educational platforms. There is potential to learn from them.

This study employed purposive sampling to select participants who were all the primary data source, ensuring that each individual or group was chosen based on their unique relevance to the ROs. The sample included:

1 Project Director of the industry partner, a person who oversees the business and makes key decisions about products and services and could answer most of the relevant questions for the research, is responsible for the company's strategy, and knows what is happening across all departments. One was able to provide the most valuable insights from their perspective by participating in the semi-structured interviews and evaluation sessions on proposed ideas to upgrade their teaching ecosystem, as well as by giving the final reflection on the proposal and next steps after this study.

1 researcher with close to 15 years in the field of education using autoethnography, investigating industry partner products, tools and services.

7 teachers, identified as the primary users and gatekeepers for students, are responsible for selecting teaching methods and materials. After several schools declined both the researcher's and the industry partner's invitation to participate in such a workshop, the school where the researcher used to work agreed. The principal, who also serves as a teacher, invited six colleagues, resulting in seven invested participants in total.

2 education platform experts, whose experience in EdTech innovating and upgrading educational platforms provided valuable insights. These participants were chosen strategically: someone who works in education, leads in innovation, operates in a large market, works on digital learning platforms, and is connected to UX.

This set of research participants and approach ensured that all stakeholders contributed meaningfully to the data, creating a comprehensive snapshot of what was happening across the industry partner's teaching ecosystem and in the educational platforms field.

3.3.3. Semi-structured Interviews

Altogether, three such interviews took place: one with the industry partner and two with the experts. Semi-structured interviews with the industry partner, the Project Director, were conducted in Latvian, and discussions with experts were held in English. The interviews were recorded with mutual consent, and the summaries, in the form of notes from the recordings and in one expert case as written answers, are part of this thesis and included in the appendices. For the interview results, directed thematic analysis was applied.

To receive primary data and understand the full picture from the industry partner, a set of questions was prepared before the interview by reviewing the industry partner's website and drafting a service blueprint on paper to identify what needed clarification and what was missing. One of the main goals was to create a base for the service blueprint from the conversation, which could be updated throughout the process. Another goal was to understand the key pain points from the company's perspective and their understanding of the main users. A few additional short message exchanges took place afterwards to fine-tune the service blueprint and stakeholder map. These clarifications are not noted in any other way than by being integrated into the service blueprint and/or stakeholder map.

The expert interview questions were not designed prior to the research but developed iteratively from the findings of the earlier phases. Following the Project Director's

evaluation and the organisation of proposals into a prioritisation matrix, four key areas emerged as requiring external validation: AI-assisted learning, individualisation and differentiation, how other platforms are updated, and accessibility. These areas formed the basis of the interview guide, ensuring that expert insights were directed at the specific design challenges identified through the research rather than at general EdTech trends.

3.3.4. Autoethnography

Autoethnography is a research method that combines personal experience with systematic cultural analysis (Chang, 2016). In this study, it was used to document and analyse the researcher's own experience as an industry partner interacting with the platform, providing an insider perspective on the phenomena under investigation.

A 30-minute auto-ethnographic exploration was conducted of a blended learning environment comprising three elements: a digital platform, a printed textbook (History, Grade 7), and a student workbook (complementary to the book). The researcher, already familiar with all three materials, conducted a structured walk-through using a timed observation protocol divided into three phases: digital platform exploration (0–10 min), print materials cross-reference (10–20 min), and synthesis (20–30 min).

Auto-ethnography positions the researcher simultaneously as observer and participant, making lived experience the primary data source. Findings were logged in real time using a structured capture tool, categorised across four research lenses (usability, features, content, quality) and rated by severity (High / Medium / Low).

3.3.5. Co-creation Workshop with Teachers

A co-creation workshop was prepared and executed with the teachers who were previously defined as the main users by the industry partner. A user co-creation workshop was used to identify what teachers like and what not about the teaching ecosystem of the industry partner. After undergoing a well-planned experience-based workshop, they provided a list of things and ideas of the most liked parts of the industry partner's teaching ecosystem, and for upgrades and innovations. The workshop was recorded under mutual consent, and the summary from the workshop worksheets, as well as the recording, are part of this thesis, added in the appendices.

The workshop was two hours long and took place in Latvian. It started with an icebreaker, then continued with mapping the knowledge and usability of different parts of the teaching ecosystem. After that, the main focus was on what, exactly, teachers like about the teaching ecosystem. From there, attention shifted to the parts of the ecosystem teachers find frustrating and dislike, and they could identify the most important ones to work on to improve the teaching ecosystem. Teachers were asked to prioritise the services that need updates. Detailed plan of the workshop and all the worksheets and other materials used can be found in Appendix VI.

Data were extracted from the written worksheets and from the event recording. After translations into English, a heatmap of usage of the industry partner's products, tools and services by the teachers was created, and directed thematic analysis was performed.

3.3.6. Service Blueprint

The service blueprint lies between methods and results and serves as a snapshot of the industry partner's educational ecosystem. It was based on the initial interview with the industry partner, autoethnographical findings, and insights from the teachers' workshop. Some additional questions were clarified on the go, for example, how the books are printed and distributed, and some other steps that needed clarification.

Service blueprints connect customer experiences with the industry partner's frontstage, backstage and support system. It is a visualised system map that helps see the whole picture, including the steps, touchpoints, and moments of truth. It contains: physical evidence, customer (in this case: teacher) actions, line of interaction, frontstage actions, line of visibility, backstage actions, line of internal interactions, and support processes (Stickdorn et al., 2018).

For this research, the service blueprint includes part of the service: the digital platform and book production, as most of the discussion focused on these digital and printed education solutions for teachers. This artefact served as a map to identify the main pain points and frustrations, and how they are connected, and therefore could be addressed in the larger picture. It served the research to better understand the industry partner's system, interactions, and to identify pain points and bottlenecks, and to instantly see how these are connected to other parts of the system.

3.3.7. Stakeholders Map

This is also an artefact more than a research method, similarly to the service blueprint. But as I use it to collect information and see how everything is interconnected, this serves as a method.

Many stakeholders are involved in the industry partner's service. A stakeholder map was needed because many stakeholders are outside the scope of the service blueprint. The stakeholder map is organised into sectors, with identified customers, internal stakeholders, and external stakeholders listed in each sector (Stickdorn et al., 2018).

3.3.8. Directed Thematic Analysis

Directed thematic analysis was performed to analyse the primary data from semi-structured interviews and the teacher creation workshop. In some cases, translations into English were necessary beforehand. To ensure both rigour and practicality, a three-level note-taking process was employed. Live notes captured the immediate context and researchers' reflections during interviews and the workshop, while post-session reviews of recordings clarified and enriched key points. Participant-created artefacts (e.g., written text and feedback) were incorporated as a third layer, providing authentic, unfiltered insights into their experiences. This multi-level approach enabled triangulation, enhancing the validity of the overall directed thematic analysis. Thematic saturation was achieved through iterative coding across all three levels. While full transcripts were not used, the combination of live notes, recording-based notes, and participant artefacts provided a comprehensive, contextually rich, and methodologically sound foundation for the study.

To focus on the room for improvement, a first round of directed thematic analysis was conducted on semi-structured interviews with the industry partner, an ethnographic study, and a workshop with teachers. It followed the conventional steps of thematic analysis with slight adjustments. It was performed to identify the main themes or topics, following the steps of thematic analysis summarised in Figure 13. Steps of Directed Thematic Analysis (Braun & Clarke, 2006), adapted for this research.. The difference from conventional analysis in directed thematic analysis is that, in the second step, the researcher applies a specific lens when coding (Hsieh & Shannon, 2005); in this case, the room for improvement chosen as the main coding topic was areas that need updates, slight fixes, or new features in the digital platform. Initially, during the first three steps of the analysis, each data set was

treated separately. When the review of themes and the final theme definition took place, all results were compiled to produce a list of proposals to improve the digital platform. For the first three steps, MS Word was used to tag ideas, which were then combined into themes. For the next steps, ideas were printed and clustered into themes on paper and then defined.

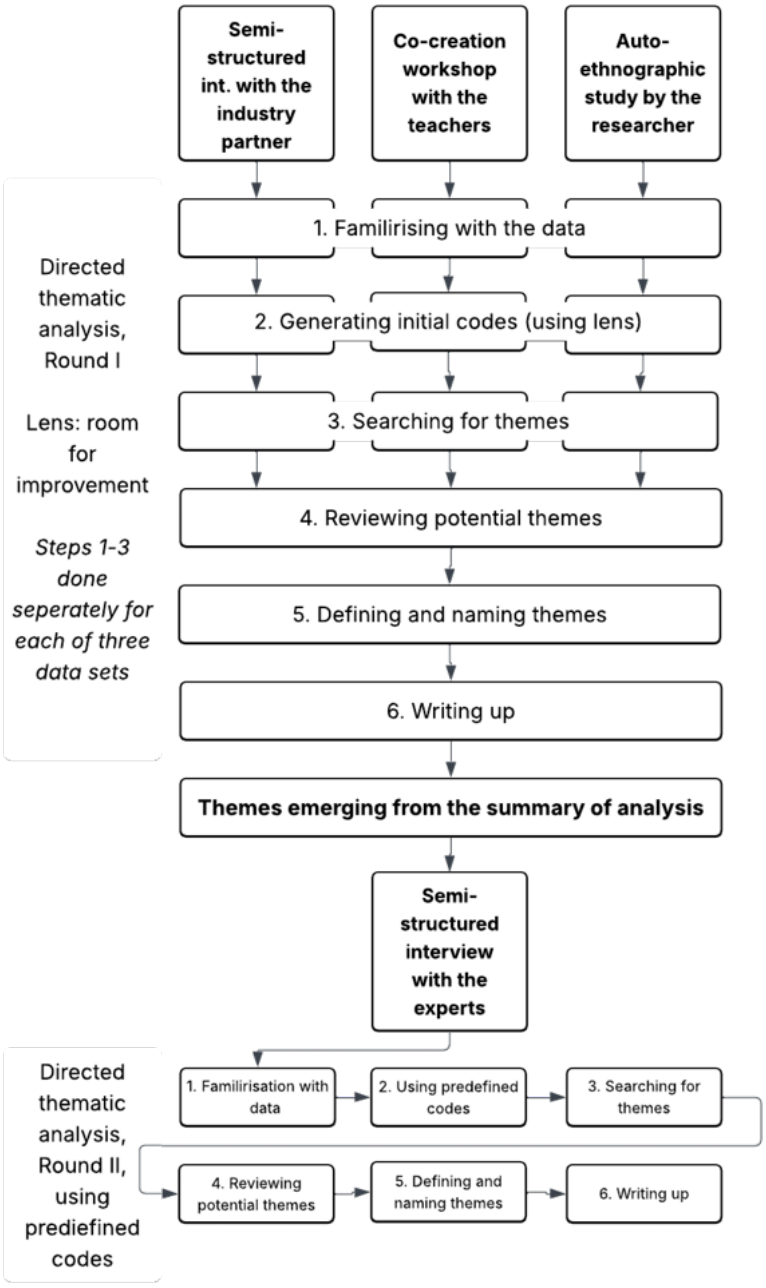


Figure 13. Steps of Directed Thematic Analysis (Braun & Clarke, 2006), adapted for this research.

A second round of directed thematic analysis was used with the expert insights interviews.

It was a slightly different approach, as a different lens was applied to focus on specific information on pre-chosen topics (Hsieh & Shannon, 2005). It was known what to expect from these interactions, so the predefined codes were applied. After initial coding, the result was reviewed and rechecked to define the final list of themes.

Methodologically, a key limitation of this approach is the risk of decontextualisation: analysing content in isolation from its surrounding context may lead to misinterpretation of findings (Hsieh & Shannon, 2005). In this study, focusing exclusively on negative feedback without accounting for positive or neutral experiences could overestimate the significance of individual complaints relative to overall user satisfaction.

3.3.9. Evaluation, Iteration, and Proposals

After conducting a directed thematic analysis of the initial interview with the industry partner, the autoethnographic study, and insights from the teachers' workshop, a list of bottlenecks and potential solutions/ideas was created and presented to the industry partner's Project Director. He then evaluated, quantitatively, the impact, difficulty, and time needed to implement these. From this, an impact-effort matrix was created. A simple 2×2 matrix was used with low/high effort/time needed and low/high impact, and labelled quadrants "quick wins" (high impact, low effort/time), "major projects" (high impact, high effort/time), "low-hanging fruit" (low impact, low effort/time), and "not worth doing" (low impact, high effort/time) (Untools., n.d.).

From there, solutions asking for strategic decisions were selected for further investigation. For these aspects, special semi-structured interview questions were developed for the experts. From there, a second round of directed thematic analysis was conducted, and the final proposal for the industry partner was created and presented for evaluation. The outcome of this intervention and potential further iterations are discussed in the results section.

3.4. Validity

A data triangulation framework was used to explain how multiple data sources, methods, or theories were combined to validate the findings (Donkoh & Mensah, 2023). In research, triangulation involves using multiple independent methods or sources to improve credibility, validity, and understanding, and it combines theories, methods, or observers to mitigate biases arising from reliance on a single approach (Donkoh & Mensah, 2023). For qualitative

researchers, it reduces limitations, leading to more reliable findings and strengthening the credibility and rigour of the analysis (Donkoh & Mensah, 2023). The diagram in Figure 14 shows how multiple data sources, methods, or theories were combined to validate findings.

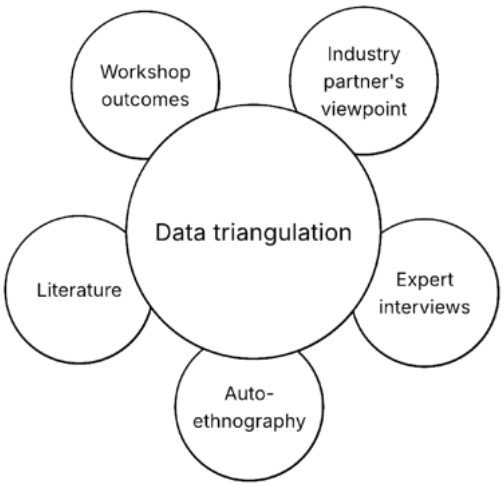


Figure 14. Data Triangulation, author's work.

In this research, a combination of several data sources, most qualitative but also quantitative, was used. Seeing the same system from the industry partner's perspective, the researcher's perspective as an experienced participant in the teaching ecosystem, and the teachers' perspectives from the co-creation workshop, in combination with the expert viewpoint and the literature findings, builds trust in this service design research.

3.5. Ethical Considerations

The study strictly upholds ethical principles, safeguarding participants' rights, confidentiality, and informed consent. All participant involvement was optional, with no obligation to continue, and the research was designed to prevent exploitation, harm, or bias. Before interviews and a co-creation workshop, participants reviewed and signed consent forms or verbally agreed to them, confirming their awareness of their right to skip questions or exit the study at any time without justification. They also consented to audio recording, understanding that their identities would be protected in all published materials. Additionally, they permitted the secure archiving of recordings in compliance with the Finnish Data Protection Act (1050/2018) and the Latvian Personal Data Processing Law, both of which implement and supplement the EU's GDPR.

4. RESULTS

This chapter presents the findings from all research phases, structured in the order they were conducted: the interview with the industry partner's Project Director, the autoethnographic exploration of the platform, the service blueprint and stakeholders map, and the co-creation workshop with teachers. This sequence reflects the logic of the Double Diamond: each phase builds on what the previous one revealed, with later phases shaped by earlier findings rather than designed in advance. The chapter continues with a synthesis of the identified themes and the central design challenge that emerges from them, marking the transition from the first to the second diamond, where evaluation of the findings and a proposal of the next steps takes place.

4.1. The Industry Partner's Perspective: Platform Gaps and Strategic Priorities

The semi-structured interview with the industry partner's Project Director served two purposes: to understand the company's strategic priorities and its perception of the platform's current strengths and gaps, and to establish the framing within which the next research phases would operate. The directed thematic analysis of the interview yielded five main themes, each pointing to a distinct dimension of the gap between the platform's intended value and its lived reality. Notes from the meeting and coding examples are added in Appendix IV. Before theming, here are the key coded extracts organised by who bears the problem, summarised in Table 4 below.

Table 4. Key Themes from the Interview: Identified Gaps and Who Experiences Them.

Code	Who experiences it
Invisible ecosystem logic	Teachers
Deferred onboarding narrative	Teachers/management
Incomplete subject coverage	Teachers
Author supply constraint	Platform/company
Anonymous data – no impact tracking	Company/researchers
Manual exam data transfer	Teachers
Quality vs. coverage tension	Company strategy
Low visibility of full teacher support concept	Teachers
Subject-based adoption disparity	Teachers
No foreign language materials	Teachers
AI/automation not yet implemented	Platform
Plans made once in August, not revisited	Teachers

First, the integration-by-design fragmentation in experience was identified. The platform is conceptually designed as a unified teaching ecosystem that covers planning, instruction, formative assessment, and summative evaluation. Yet the Director openly acknowledges that this integration is architecturally present but experientially absent for users, saying, “they use individual parts but don’t see the big picture” during the interview. Teachers encounter the platform as a collection of tools rather than a coherent pedagogical journey.

It seems that the workflow is not sequenced from the teacher’s perspective. Lesson plans are stored in a separate “teaching resources” area and are typically accessed only once, in August. This suggests the platform is organised around content categories (the company’s internal logic) rather than teacher task flow (the user’s temporal reality). And the “full support” concept has not been communicated. The Director notes that the idea of complete, end-to-end teacher support has not been presented to clients in a way that is easy to grasp. Teachers may not know this is what the platform intends to offer. This is simultaneously a UX, a marketing, and an onboarding problem.

Content gaps were identified and serve as a structural inequality among users. The platform’s usefulness is not uniform across its user base. Coverage gaps create a two-tier experience: teachers of high-priority, high-frequency subjects (Mathematics, Biology, Physics) have access to rich, well-developed materials, while teachers of lower-frequency or newer subjects (Computer Science, Music) have access to limited or nonexistent resources. The prioritisation logic is explicitly economic and pragmatic, as lesson count per week determines investment order. Foreign languages are excluded entirely by deliberate strategic choice, citing international competition. While these decisions are internally coherent, they have an unacknowledged consequence: the platform’s core value proposition, saving teacher preparation time, does not apply equally to all its users. A music teacher on a school-wide subscription derives substantially less value than a biology teacher at this point.

The platform’s stated primary purpose is to save teachers time. Automation of grade transfer to the School Information System (SIS, anonymised reference to the Latvian electronic school management system) is presented as a key feature. However, this automation breaks down precisely at the highest-stakes assessment point: final/summative tests. Data must be manually copied rather than transferred automatically. This is a direct contradiction of the platform’s core promise at the moment teachers most need relief.

Another theme that emerged is the inability to demonstrate impact. The platform collects substantial behavioural data, millions of completed formative assessments, but its anonymisation policy prevents longitudinal tracking of individual students. As a result, the company cannot empirically demonstrate that the platform improves learning outcomes. The director acknowledges this plainly. This has layered implications. Internally, it limits the company's ability to evaluate and improve its product based on evidence from learning. Externally, it weakens the platform's position when schools, local governments, or the Ministry of Science and Education ask for outcome-based justification. In an increasingly evidence-driven educational policy environment, this is a strategic vulnerability.

The Director does not discuss teacher attrition from the platform in terms of dissatisfaction, only physical school departure.

4.2. Autoethnographic Exploration: Usability, Accessibility, and Content Gaps

The researcher's existing familiarity with the materials enabled deeper analytical attention rather than orientation. Some accessibility features (screen reader, contrast tools) were tested for the first time, so findings in that area reflect a novice user's first encounter rather than expert evaluation. This familiarity, while analytically useful, may have masked discoverability problems that a first-time user would encounter more immediately.

The exploration generated 30 logged findings over 30 minutes, grouped into four predefined categories: usability, features, content, and quality. The dominant category was usability (20 findings, 67%), signalling that interaction and navigation design is the most immediate area of attention. Features (5 findings) and content (3 findings) represent systemic gaps, while quality (2 findings) was largely positive, with observations about the printed materials.

The digital platform was the primary focus of concern, accounting for 26 of 30 findings. The book and workbook attracted fewer observations, and those were largely constructive or minor. The complete findings log and the themes emerging from the directed thematic analysis are available in Appendix V.

The single most disruptive theme across the session was the platform's organisational structure. Five findings converge on two root issues: labelling and materials are not organised to mirror how teachers and students think about their subject. A hierarchy of Subject → Grade → Topic → Materials was expected. Instead, the platform presents

materials grouped by grade at the subject level, without further topic-level clustering. In upper secondary, an additional complication arises: the platform uses grade numbers (10, 11) while the curriculum uses proficiency levels (basic, intermediate), causing a direct mismatch might arise for students enrolled in a grade 11 course that the platform labels as grade 10.

The “All Materials” section was discovered late in the logging and represented the closest match to expected behaviour, but its placement and labelling make it easy to miss. The back-navigation bug was noticed: the platform’s back button returns to the wrong level, while the browser’s back button works correctly; this significantly compounds navigational friction.

Four findings collectively identify a serious gap in accessibility provision. Contrast adjustment, screen magnifier, and text-to-speech tools are not discoverable through normal interface exploration. The keyboard navigation test (Tab key in Safari) failed. This is categorised as a critical concern because accessibility is both a pedagogical and a legal obligation in most jurisdictions.

Two findings point to incomplete content coverage: not all subjects are represented for all grades, and some subject areas are absent entirely. This is not a usability issue but a content commissioning gap. For teachers whose subject is absent, the platform offers no meaningful functionality, which undermines adoption.

The e-learning catalogue for teachers contains only one course (burnout prevention), suggesting the professional development offer is embryonic. Teachers would benefit from pedagogical guidance, subject-specific methodology courses, and platform training, but none of these appears to be present there; they exist in industry partners’ social media accounts, e.g., YouTube channels.

The thematic plans are downloadable PDFs rather than editable documents, requiring teachers to download, open in Word, and re-format before customising. This creates unnecessary friction for routine planning tasks.

Among the affirmative findings, the availability of the digital workbook on the platform and the teacher-only visibility of final test results are notable features to preserve.

Findings so far informed both the service blueprint and the stakeholders map, as well as the focus areas of the co-creation workshop that followed.

4.3. Mapping the System: Service Blueprint and Stakeholder Analysis

The service blueprint and stakeholders map were developed iteratively across the research process, drawing on the initial interview, the autoethnographic findings, and, later, the workshop data. Both artefacts are available in full in Appendix I and Appendix II.

The service blueprint and stakeholder map together provide a systemic picture that neither the interview nor the autoethnographic exploration could produce on its own. The blueprint made visible the structural misalignment between the platform's internal logic and the teacher's temporal reality: rather than following a sequential, lesson-centred flow, the teacher's journey fragments across separate sections, such as thematic plan, digital textbook, formative assessment, and final test, each accessed independently through different navigation paths. This reflects an architecture organised around content categories rather than around the teacher's working rhythm of year, topic, lesson, and evaluation. Two critical backstage dynamics compounded this: the grade transfer automation breaks down at the summative test stage precisely when teachers most need relief.

The stakeholder map extended the frame beyond what the blueprint could capture, making visible a second tier of actors whose decisions shape teacher engagement without appearing anywhere in the platform's interface. Municipal departments determine subscription access; principals function as gatekeepers through their stance on digital integration and professional development; and the Ministry of Education and Science influences the platform consequently through curriculum reform cycles, as the 2018–2019 reform created a content backlog that teachers in all grade levels experience as a platform gap rather than an upstream policy effect. Third-party systems, particularly SIS, occupy a structurally awkward position: neither controlled by the industry partner nor optional for teachers, yet embedded in the most critical assessment workflows, meaning integration failures appear to teachers as platform problems. Together, the two artefacts indicate where the industry partner has direct design agency and where it depends on coordination with external actors; it cannot change on its own.

4.4. From Experience to Ideas: The Co-creation Workshop

A two-hour co-creation workshop was conducted at a secondary school in Cēsis, Latvia, bringing together seven teachers teaching different subjects with varying levels of experience with the platform, ranging from novice users to highly proficient educators,

including one participant who had authored books and materials for the industry partner. This diverse mix of expertise created a rich environment for discussion and idea exchange, allowing insights to emerge from multiple perspectives along the user experience spectrum.

All participants remained actively engaged throughout the session. Completed worksheets, including scans and English translations, are documented in Appendix VII. The data gathered was subsequently analysed using a heatmap to map awareness and usage patterns, and a directed thematic analysis to identify bottlenecks and opportunities for improvement across the teaching ecosystem.

The findings are presented in four parts: participant profiles, awareness and usage patterns, identified problems and frustrations, together with proposals for improvement, and teachers' reflections.

4.4.1. Participant Profiles

The opening icebreaker established what would become one of the workshop's most analytically significant findings: the seven participants represented almost the full spectrum of possible engagement with the platform, from a geography teacher using only printed worksheets to a physics teacher who described the platform as 'a lifesaver' and had been paying for access personally before school funding was provided. This range was not incidental, and it meant that the workshop functioned simultaneously as a window into what highly engaged users value and what stands between hesitant users and deeper adoption. The participant profiles are summarised in Table 5.

Table 5. Participant, Engagement Level, and Primary Use of Digital Platform.

Participant	Engagement Level	Primary Use of digital platform
Physics Teacher	Expert	1:1 instruction, worksheets, tests, error reporting
History Teacher / Co-author	Advanced	Adapts content to teaching style
History / Social Studies Teacher	Intermediate	Tests (wants custom test creation)
Latvian Language	Intermediate	Grade-specific materials
Math Teacher 1	Basic	Displaying assignments, e-books
Math Teacher 2	Basic	Assignments (struggles with engagement)
Geography Teacher	Beginner	Worksheets only

Two patterns are worth noting before the findings are presented. First, engagement level did not correlate straightforwardly with subject or experience, as one of the most advanced users was a history teacher and co-author of platform materials, who nonetheless adapts existing content to his teaching style rather than using it as designed. Second, the two mathematics teachers, despite teaching the same subject, described meaningfully different relationships with the platform, suggesting that individual instruction style matters as much as the subject area. These differences informed how the workshop data were interpreted throughout the analysis.

4.4.2. Awareness and Usage Patterns: Heatmap Findings

The heatmap task asked participants to indicate their awareness and frequency of use for each product and tool in the industry partner's teaching ecosystem. The results are visualised in Figure 15 and reveal four distinct patterns of engagement.

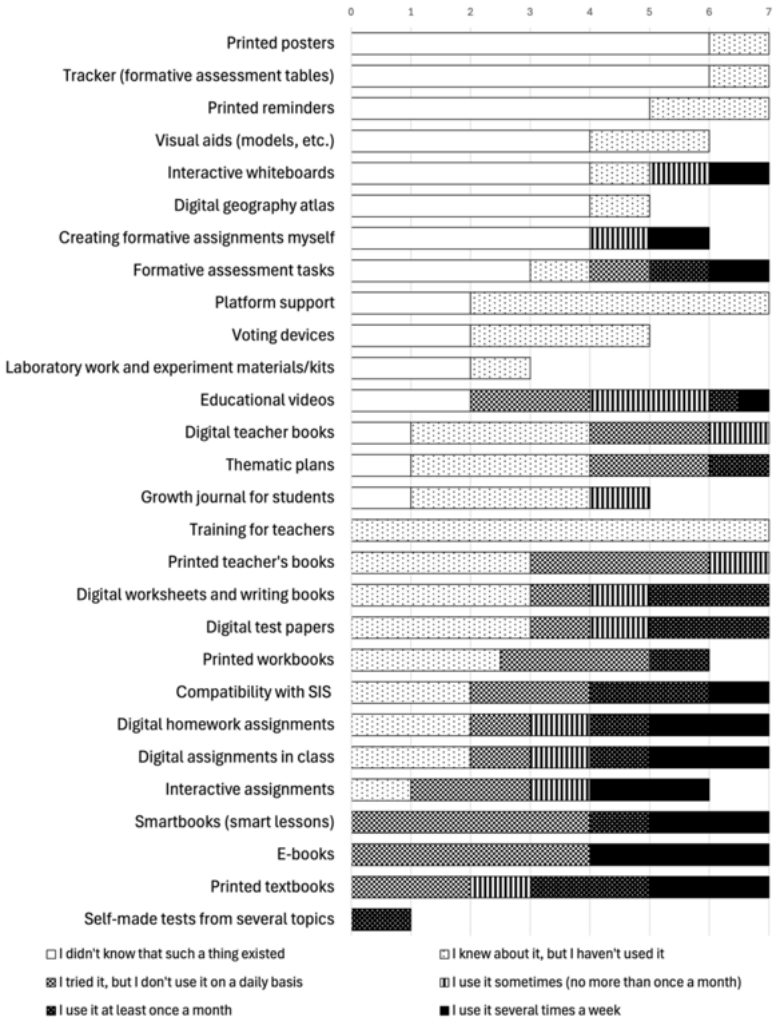


Figure 15. The Heatmap: Awareness and Usage of Elements of Teaching Ecosystem.

A significant portion of the teaching ecosystem's offering, including printed posters, formative assessment trackers, printed reminders, visual aids, interactive whiteboards, the digital geography atlas, and the tool for creating formative assessments, was unknown to most participants. This finding gives measurable weight to the onboarding gap identified in the initial interview: teachers are not simply choosing not to use these tools; they do not know they exist.

A second group of products, such as digital teacher books, thematic plans, and the student growth journal, was known but rarely used. Most strikingly, all seven participants reported awareness of the teacher training offer but stated they had never engaged with it. This is a significant finding: the one resource designed specifically to support teachers in using the platform is the one they consistently pass over.

At the other end of the spectrum, digital homework assignments, digital in-class assignments, interactive assignments, smartbooks, e-books, and printed textbooks were used at least weekly by at least two participants, confirming these as the platform's core functional layer from the teacher's perspective.

The heatmap findings establish a clear hierarchy of engagement across the platform's product range and suggest that awareness and communication gaps are as significant a barrier to full adoption as usability or content issues.

4.4.3. Valued Tools and Improvement Requests

The next workshop task asked participants, working in three teams, to identify the platform tools and products they find genuinely useful, discuss what problems these solve, and suggest how they could be improved. The aim was not to produce a satisfaction rating but to understand what is already working well and why, summarised in Table 6.

Smartbooks were the only tool mentioned positively by all three teams, confirming their central role in the platform's value proposition for teachers. Tests were valued for their flexibility but consistently limited by the inability to add custom questions, a constraint that surfaced across multiple workshop tasks. The pattern across all six tools points to a single underlying need: teachers value what the platform already provides, but want the ability to make it their own. Customisation, such as adding content, adjusting structure, and

personalising for their class, emerged as the dominant improvement theme of the entire section, cutting across subject areas and engagement levels.

Table 6. Summary of Complimented Tools and Products, and Improvement Requests.

Tool / Product Mentioned as useful	**Benefits**	**Improvement Requests and General Complaints**
Smartbooks (three teams)	Student-led learning when teacher absent; exercises available; theory accessible to students; no printing/copying; topics and tests aligned by class; supports formative assessment	Teachers add own content; new Skola 2030-aligned books needed as soon as possible
Tests (two teams)	Create tests from pre-existing questions; upload to e-class; exercises for different levels; can include own questions	Add own questions; randomise order and answers Formative test results higher than written results (students struggle to formulate thoughts in writing)
Printed textbooks	Maps, diagrams, tables, illustrations for specific topics; alternative info source beyond text	Optimal content + supplementary chapters with in-depth material; separate essential vs. supplementary content (improvements could be transferred tp e-books as well)
E-book	Access when print unavailable; can copy/paste content for lessons; no carrying heavy books; solves “which page” confusion when displayed on board	Faster publication of new books (severe shortage of materials for secondary school level, Books published too slowly – forces use of outdated materials)
Digital worksheets	No printing needed	More worksheets; secondary school level especially needed; customisable layout with minimal white space (teachers want ability to assemble custom worksheets).
Workbook	Includes learning objectives; differentiated tasks; use as task collection	-

4.4.4. Identified Problems and Frustrations

The workshop’s directed thematic analysis focused on what is not working. Participants used the ‘stinky fish’ metaphor to surface problems, missing features, and frustrations with the platform’s tools and products, the issues they find problematic but tend to avoid addressing directly (Hyper Island, n.d.). The coded findings were clustered into four themes, summarised in Table 7 (next page).

Table 7. Key Problems Identified, Organised by the Themes.

Content Gaps	Usability Issues	Quality Concerns	Missing Features
Limited materials for high school subjects overall. Missing worksheets for high school mathematics and 9th-grade geography, high school in general. Lack of video materials for basic topics, geography, and mathematics.	Teachers struggle to find needed materials and reports. Text entry in worksheets is difficult (the "enter text here" function is confusing for students). Navigation problems: closing/hiding content when accessing subjects. Scheduling errors for tests (requires multiple confirmations).	Errors in math answers. Poor audio quality in social studies videos ("hard-to-hear or very silent voice in the videos").	No option for digital worksheet completion (especially noted as problematic for history). Teachers cannot add custom assignments or questions to tests and smartbooks (mentioned by 2 teams). No digital exam sheets.

Once the key problems were identified, the workshop shifted to generating solutions. First, every team chose at least one top priority problem from the previously done "Stinky fish" exercise and suggested a solution, then they did a silent collective brainstorm, coming up with solutions individually and concluded the brainstorming by writing a postcard to the industry partner stating what would be the most important thing to do.

As the most crucial issue to address, teachers mentioned that they should be able to add their own content, such as "Teachers should also have the option to create their own worksheets". Text input problems for the worksheets were highlighted as well. Teachers were asking for more content, especially for upper secondary school, improved user friendliness for SIS integrated tools, and switching viewpoints between teachers' and students'. All the updates needed from the teachers' perspective are summarised in Appendix VII. These themes were drawn using coding in directed thematic analysis.

Where teachers elaborated at length, it signals genuine investment in the outcome. For example, when discussing the ability to add custom content by adding their own questions to the tests, tasks in the worksheets, and texts, pictures, videos, or other content to the smartbooks, teachers explained the benefits and needs: "Teachers should be able to assess their students' skill levels and add or remove specific content". They noted that it would be

important to save and reuse these individualised teaching materials for reusing with other groups, in the next academic year, etc.

Even though teachers say it would be useful to see tasks from students' perspectives, they also note that the system has loopholes. When opening the task link from SIS, the content appears as if you were a student, which is confusing and takes extra time to reorient. "There should be a teacher's profile [always open for a teacher] and the option to switch to the student's view", participants observed.

Teachers mentioned needing more content very frequently. Especially, about the upper secondary grade level and the videos. About the latter, teachers noted that there "should be a smart lesson + video + a quiz on what was seen and taught" so the "students can learn independently, and the teacher acts as a consultant in the learning process".

Particular frustration was directed at the 'type text here' function in worksheets. "It's hard to type the test into the worksheet using the keyboard", and asked to "Make the text box bigger! It's hard to position the cursor to start typing". The "Type text here" function is confusing for students when adding information, as well as for teachers when seeing many "Type text here" entries saved with the needed information somewhere under a pile of those.

All these identified frustrations and ideas were summarised and shared with the industry partner.

4.4.5. Reflection

The closing reflection revealed two notable patterns. First, participants from lower engagement levels found particular value in observing how more experienced colleagues use the platform. Several noted they planned to try features they had not previously been aware of, such as test scheduling and the digital atlas. One participant summarised the session by observing that the workshop had revealed how little of the platform's full offer had been visible in their daily use.

Second, while the workshop opened with a holistic view of the full teaching ecosystem, discussion progressively converged on the digital platform. All proposals that emerged concern digital tools and features. This was not a design constraint but an organic outcome,

suggesting that the digital platform is where teachers experience both the greatest potential and the most significant friction.

4.5. Consolidated Design Proposals

Following the workshop, all identified problems and proposals were reviewed across all data sources: the initial interview, the autoethnographic exploration, the service blueprint, the stakeholders map, and the co-creation workshop outputs. Similar ideas were merged and refined, producing a consolidated set of 35 proposals. These were organised into four themes that reflect the nature of the interventions required: usability issues, iterative improvements, missing features, and content gaps and quality concerns. Each proposal was assigned a reference number to enable traceability through the subsequent evaluation and prioritisation stages.

Content gaps and quality concerns were merged into a single theme because both relate to what the platform contains rather than how it works. A middle-ground category, "iterative improvements," was created for proposals that fall between simple usability issues and entirely missing features: existing tools that require meaningful development to reach their potential, see Figure 16.

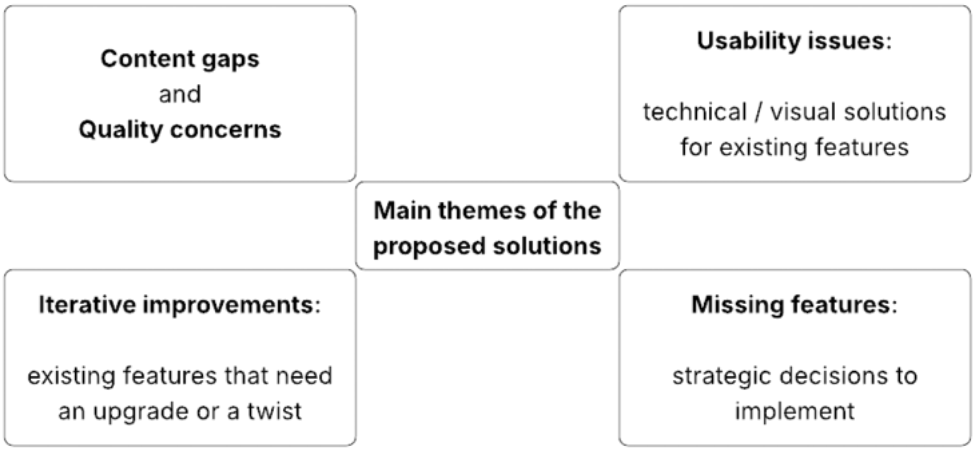


Figure 16. Main Themes of the Proposed Solutions.

4.5.1. Content gaps and quality concerns

Content gaps and quality concerns address what the platform contains, the need for more materials at the upper secondary school level and the correction of existing errors. All fitting under this are summarised in Table 8 below.

Table 8. Content Gaps and Quality Concerns Identified.

Content gaps and quality concerns		
Add more video content. (01)	Make louder narration for videos. (02)	Review the content of the math tests and correct any errors. (07)
Make books and supplementary content (worksheets, exercise sets) for high school. (06)	Create a separate section with strategies/techniques for students to learn to study more effectively. (31)	More worksheets and include assignments for each topic and each learning outcome; secondary school level especially needed. (03)

The content gap proposals are the most straightforward to evaluate: they do not require platform redesign, only resources to fix the identified bugs and editorial capacity.

4.5.2. Usability issues

Usability issues concern friction points in the platform's existing interface. These feel like small but recurring obstacles that disrupt the teacher's workflow during active use. All proposed solutions under this theme are summarised in Table 9.

Table 9. Usability Issues Identified.

Usability issues		
Make %% for tests without decimals – in full numbers. (23)	Eliminate scheduling errors for tests (requires multiple confirmations). (29)	Equip icons (tests, smartbooks) with a permanently visible label (maybe when hovering over them). (16)
Update student view: as soon as they get a new test or task they see it on their profile, no need to go through SIS. (28)	Add the ability to apply a filter to show only the content you're interested in every time you log in. (26)	Ensure teachers always see content in teacher view when opening links from SIS, rather than defaulting to student view. (22)
Add the ability to upload additional test results that were completed later or retaken to the SIS (until you click "Finish," you can't submit the results; once you submit, you can't add to it). (20)	Improve text entry in worksheets - "Type text here" function is confusing for the students when adding information, as well as for the teachers when seeing millions of "Type text here" saved with the needed information somewhere under a pile of those. (14)	

The most frequently mentioned usability issue across the workshop was the text entry problem in worksheets, signalling that even small interface friction points can accumulate into significant disengagement. The other part of improvements signals design frictions, such as icon readability and digital platform page views.

4.5.3. Iterative improvements

Iterative improvements concern existing tools and features that require meaningful development rather than simple fixes, upgrades that would significantly change the teacher's experience without requiring entirely new platform architecture. All are listed in Table 10 below.

Table 10. Iterative Improvements Identified.

Iterative improvements		
Add the option to "unlock" content for students in parts. (09)	For worksheets, make a customisable layout with minimal white space (essential for printing). (05)	Add option, for the teacher's profile, the ability to see how the assignment appears from the student's profile. (17)
Create digital workbook overview: see kids work overview; each page is separate at the moment. (15)	Add option to randomise order of test questions and answers for each student in tests (and worksheets) (11)	Organize high school materials according to the optimal level and the advanced level. (25)
Create an option to see students working in real time – see who is stuck, who has completed everything etc.(real-time tracker). (21)	Indicate the essential vs. supplementary content in books and e-books (optimal content + supplementary chapters). (13)	Add possibility to sort assignments by assignment date or last activity (now, Started and completed tests in a single section, but organized separately). (34)
Combine the book's content, learning activities, and tests by subtopics so that users don't have to switch between sections (currently, these are three separate sets of materials) – topic: learning outcomes listed, smartbook, video, feedback linked with assignments – all together, that would be the ideal solution. (24)		

The most ambitious iterative improvement, namely combining book content, learning activities, and tests by subtopic into a single view, was mentioned four times across different workshop tasks, suggesting it represents a widely felt structural gap rather than an individual preference. Most of these ideas could be categorised under the code of information design, which concerns how information is structured on digital platforms.

4.5.4. Missing features

Missing features represent capabilities the platform does not currently offer and whose implementation requires strategic prioritisation. Many involve personalisation, AI

integration, or significant architectural changes. The identified are summarised in Table 11 below.

Table 11. Missing Features Identified.

Missing features		
Being able to differentiate – different sets of various tests or levels for the students (individually tailored). (12)	Add feedback option to give students on completed assignments (might incorporate AI or just teacher comments). (19)	"Start with this, do that" – if students get stuck, there should be automatic hints (self-help and guidance before the teacher). (08)
Create materials so that students can learn independently. Video + smartbook + short quiz for feedback. (04)	Upgrade accessibility of the platform for students and teachers: option to change bigger-smaller letters, contrast, text-to-speech etc. (30)	Add the ability to organize information within a presentation from the existing content, with ability to add own slides. (27)
Create a virtual tutor / assistant for each student with the help of AI (reminds, explains, suggests strategies, is safe, etc.). (35)	Add a timeline somewhere for every class: year overview + where are we at the moment (and the content getting suggested as the topic goes). (33)	Automate checking and grading final tests, connect with SIS. At least the ABC tests (next level: add AI that helps with grading open-ended questions). (18)
The ability to embed other informational sources from external resources in smartbooks, tests and worksheets – the ability to combine multiple worksheets into one. Building blocks of information in the platform + self-created blocks. (10)	Rebrand and remake the platform as a tool for lesson creation and storage for any subject on the top of being a digital library of teaching materials – create an option for teachers to create their own supplemented, personalised collection of assignments and lessons. (32)	

The missing features category contains the proposals with the highest strategic implications, including AI-assisted grading, a virtual student tutor, and a full platform rebrand toward teacher-created content, all of which would require significant investment and directional commitment from the industry partner. That's why these topics were chosen for the experts to address.

4.6. The Design Challenge

The co-creation workshop served a dual function in this research. In the first half, teachers mapped their current experience of the platform by identifying pain points, service gaps, and unmet needs, and completed the Define phase of the Double Diamond. In its second half, teachers shifted into generative mode, proposing ideas for improvement. This transition

within the workshop mirrors the transition between the two diamonds, and analysing both halves together made it possible to articulate the following design challenge.

Across the initial interview, the autoethnographic exploration, the service blueprint, the stakeholders map, and the co-creation workshop, four consistent themes emerged: content gaps, usability issues, missing features, and the need for iterative improvements. Together, these findings do not point to isolated fixes. They point to a structural misalignment between how the platform is organised and how teachers actually work. The platform was built around content categories; teachers think in subjects, grades, topics, and school days. Closing that gap and making the platform's potential reachable within the real conditions of a school day is the central design challenge this research addresses.

This challenge can be expressed as: How might we redesign the teacher's experience on the platform so that its full potential is accessible under the real conditions of a school day?

This question marks the transition from the first to the second diamond and opens the Develop phase. The 35 proposed ideas gathered through the research were brought to the Project Director for evaluation, not to validate what had been found, but to begin shaping which directions were feasible and impactful enough to develop further. His assessment produced a prioritisation matrix that filtered the proposals into actionable groups, forming the working brief for the second diamond. The expert interviews then tested and refined these prioritised proposals against experience from comparable educational platform contexts internationally, and the final set of service interventions was presented to the industry partner as the design deliverable of this research.

4.7. Project Director's Evaluation and Prioritisation Matrix

The consolidated set of 35 proposals was presented to the Project Director in a structured evaluation meeting. The full record of the meeting, including the scoring, is available in Appendix VIII. The Project Director confirmed that teachers' preferences for teaching ecosystem products aligned with the company's current promotional focus, though he was surprised by their awareness of the Growth journal, and also noted complaints to be shared with the team already.

The Director was asked to assess each proposal on three dimensions: potential impact on teacher engagement and platform usability, estimated implementation time, and level of

difficulty. These three dimensions were then used to apply a prioritisation matrix (Untools, n.d.), dividing the proposals into four groups: quick wins, major projects, fill-ins, and thankless tasks. In practice, time and difficulty were frequently rated similarly, as more complex proposals tended to require longer timeframes, so effort and time are treated as closely aligned dimensions in this analysis. The full evaluation scores are visualised in Figure 17.

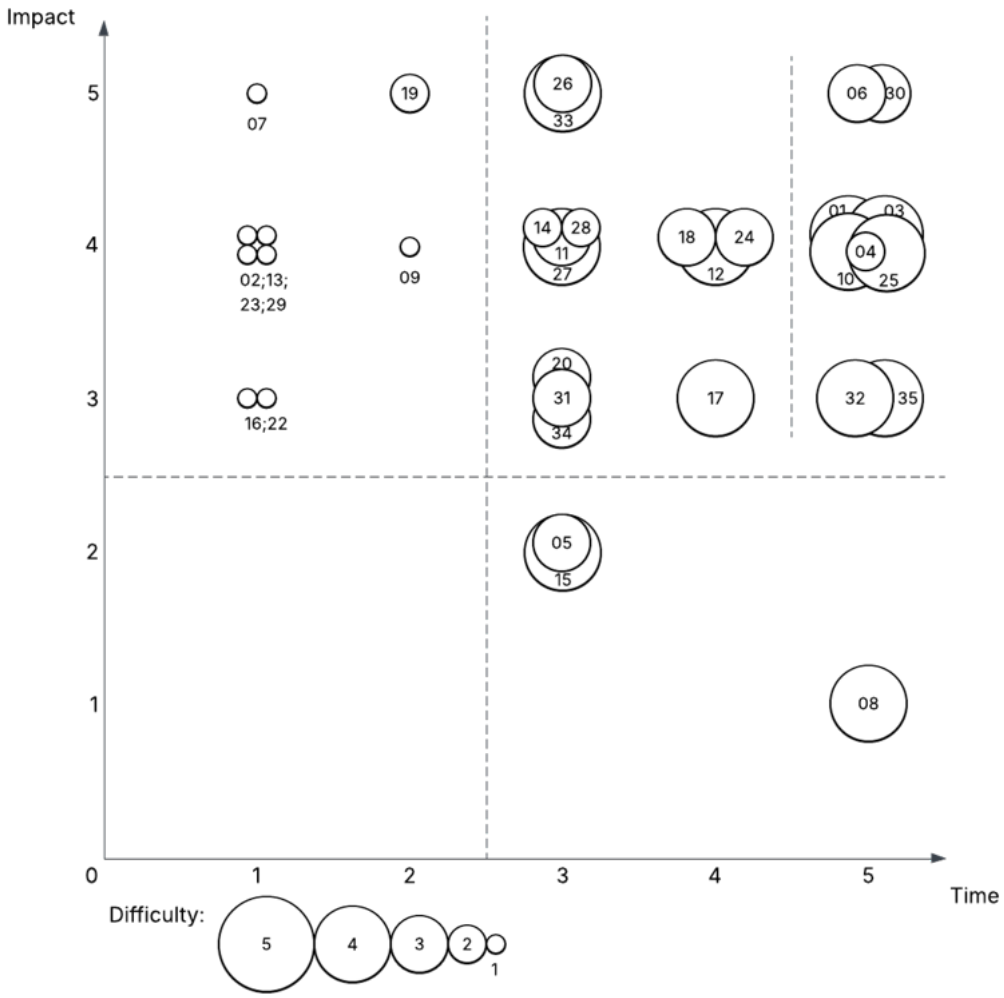


Figure 17. The Proposed Ideas Evaluated by the Industry Partner.

4.7.1. Quick Wins

The upper-right corner of the matrix captures quick wins. These fixes take a few days to a few weeks to implement. These proposals share a common characteristic: they address specific, recurring friction points that are technically straightforward to resolve, as summarised in Table 12 (next page).

Table 12. Quick Wins: In Order of Impact (read by rows).

Quick wins		
Review the content of the math tests and correct any errors. (07)	Add a feedback option to give students on completed assignments (might incorporate AI or just teacher comments). (19)	Make louder narration for videos. (02)
Indicate the essential vs. supplementary content in books and e-books (optimal content + supplementary chapters). (13)	Make %% for tests without decimals – in full numbers. (23)	Eliminate scheduling errors for tests (requires multiple confirmations). (29)
Add the option to “unlock” content for students in parts. (09)	Equip icons (tests, smartbooks) with a permanently visible label (maybe when hovering over them). (16)	Ensure teachers always see content in teacher view when opening links from SIS, rather than defaulting to student view. (22)

Many of these overlap with the quality and usability issues groups identified previously. The quick wins group contains nine proposals, most of which are targeted interface corrections requiring minimal development effort. Their relatively high impact scores suggest that small, well-placed fixes could produce disproportionate improvements in the teacher’s daily experience of the platform.

4.7.2. Major Projects

The ideas landing in the upper right corner are major projects. All ideas scoring three or above on impact and three or above on implementation time belong to this group; there are 19 proposals in total. Given the size of this group, it was divided into two subcategories based on estimated timeframe: proposals implementable within a year, and those requiring longer. The former represents the primary focus for near-term development; the latter involves strategic decisions about the platform’s direction.

Major projects under a year, with impact ranked from 5 to 3, moderate to challenging difficulty. 13 ideas in this subcategory. See Table 13 (next page).

Table 13. Major Projects, Near-Term Development, Under a Year: In Order of Impact (read by rows).

Major projects, under a year		
Add the ability to apply a filter to show only the content you're interested in every time you log in. (26)	Add a timeline somewhere for every class: year overview + where are we at the moment (and the content getting suggested as the topic goes). (33)	Add an option to randomise the order of test questions and answers for each student in tests (and worksheets). (11)
Automate checking and grading final tests, connect with SIS. At least the ABC tests (next level: add AI that helps with grading open-ended questions). (18)	Combine the book's content, learning activities, and tests by subtopics so that users don't have to switch between sections (currently, these are three separate sets of materials). Topic: learning outcomes listed, smartbook, video, feedback linked with assignments – all together, that would be the ideal solution. (24)	Add the ability to organise information within a presentation from the existing content, with the ability to add your own slides. (27)
Improve text entry in worksheets - "Type text here" function is confusing for the students when adding information, as well as for the teachers when seeing millions of "Type text here" saved with the needed information somewhere under a pile of those. (14)	Update student view: as soon as they get a new test or task, they see it on their profile, no need to go through SIS. (28)	Being able to differentiate – different sets of various tests or levels for the students (individually tailored). (12)
Add the ability to upload additional test results that were completed later or retaken to the SIS (until you click "Finish," you can't submit the results; once you submit, you can't add to it). (20)	Create a separate section with strategies/techniques for students to learn to study more effectively. (31)	Add the possibility to sort assignments by assignment date or last activity (now, Started and completed tests in a single section, but organised separately). (34)
Add an option for the teacher's profile, the ability to see how the assignment appears from the student's profile. (17)		

Then there are major projects that would take over a year to be implemented, in the order of the impact from 5 to 3, two moderate and the rest challenging in difficulty. Eight ideas in this sub-category. See Table 14 (next page).

Table 14. Major Projects, Strategic Decisions, Over a Year: In Order of Impact (read by rows).

Major projects, over a year		
Upgrade accessibility of the platform for students and teachers: option to change bigger or smaller letters, contrast, text-to-speech, etc. (30)	Make books and supplementary content (worksheets, exercise sets) for high school. (06)	Add more video content. (01)
Create materials so that students can learn independently. Video + smartbook + short quiz for feedback. (04)	More worksheets and include assignments for each topic and each learning outcome; the upper secondary school level is especially needed. (03)	The ability to embed other informational sources from external resources in smartbooks, tests and worksheets. The ability to combine multiple worksheets into one. Building blocks of information in the platform + self-created blocks. (10)
Organise high school materials according to the optimal level and the advanced level. (25)	Rebrand and remake the platform as a tool for lesson creation and storage for any subject, on top of being a digital library of teaching materials. Create an option for teachers to create their own supplemented, personalised collection of assignments and lessons. (32)	Create a virtual tutor / assistant for each student with the help of AI (reminds, explains, suggests strategies, is safe, etc.). (35)

Major projects, especially those that might span over a year, are the main part to focus on in further research. Long projects mostly ask for strategic decisions. Most of the ideas landing in this category overlap with the missing features theme identified earlier. These are proposals that need the most exploration before implementing.

4.7.3. Fill-ins and Thankless Tasks

The fill-ins category is empty; no proposals were assessed as low difficulty and low impact. Three proposals were classified as thankless tasks: ideas that would require significant effort but are assessed as low impact at this stage. These are not dismissed permanently but are deprioritised unless further evidence of need emerges, summarised in Table 15.

Table 15. Thankless Tasks.

Proposal	**Time**	**Difficulty**
For worksheets, make a customisable layout with minimal white space (essential for printing). (05)	A few months to one year	Moderate

Create digital workbook overview: see kids' work overview; each page is separate at the moment. (15)	A few months to one year	Challenging
"Start with this, do that" – if students get stuck, there should be automatic hints (self-help and guidance before the teacher). (08)	Over a year	Challenging

4.7.4. Summary of the Evaluation

Reflecting on the proposals as a whole, the Project Director identified three natural groupings, based on the difficulty and time needed, (1) ideas that are minor, easy to implement and would give immediate improvements in usability, (2) ideas that are more time-consuming but still very clear, like creating new teaching materials for a grade for one subject, it takes approximately a year, and (3) ideas that are connected to strategic decisions like interwoven the platform with AI tools or redesigning the platform that it becomes a place for teachers to add their own materials. The latter has been discussed in the industry partner's strategic meetings, and for now, they have agreed to keep the materials on the platform only to those created by the company itself. "It is challenging to keep up the quality of the materials if educators are allowed to put whatever they prefer," says the Project Director. This positions content quality control as a deliberate strategic constraint rather than a technical limitation, a distinction that shapes how several of the major project proposals should be understood. The Director's grouping logic aligns closely with the prioritisation matrix outcome, validating the framework as a useful tool for structuring the proposals.

The Project Director decided not to evaluate idea No. 21, as it was dismissed for being similar to an existing feature: a real-time tracker that allows you to see students working live, including who might be stuck and who has finished all tasks.

These proposals, mostly focused on long-term strategic decisions, were carried into the expert validation interviews that followed, where they were tested against experience from comparable educational platform contexts internationally.

4.8. Expert Viewpoint

The expert interview questions were drawn directly from the prioritisation matrix and the four thematic areas identified across the earlier research phases. Rather than approaching experts with a general question set, the interviews focused on what was extracted in the research so far.

This summary synthesises findings from two expert interviews conducted. Both interviews used the same question set and are analysed together as a combined evidence base, with expert voices attributed individually where they add a distinct perspective. Expert RG is a Senior UX Design Manager working for a major K-12 ed-tech company based in the USA. Expert EI is a representative from a large-scale digital lifelong learning platform operating globally. Questions, transcript and written answers are attached in Appendix IX.

After the interviews, the second round of directed thematic analysis was done. This time, a list of predefined codes was used. Also, code "other" was added to the ideas worth mentioning. Table 16 below provides a reference to use and the distribution of thematic codes across the two expert sources.

Table 16. Thematic Codes Used in This Analysis and the Key Topics.

Code	Expert RG – Key topics	Expert EI – Key topics
Accessibility	WCAG 2.1 AA process; internal specialist; external audit; EU directive	WCAG 2.1 AA; assistive tech testing; keyboard navigation; captions; transcripts; authoring guidelines
Individualisation	Teacher-orchestrated differentiation; core curriculum + intervention bundles; adaptive assessment; class grouping	Self-paced; AI recommendations; diagnostics; skill dashboards; learning paths; flexible deadlines
Use of AI	Lesson planning assistant; AI response summariser; human-in-the-loop; reducing admin burden; system integration	AI Coach; AI grading; rubric-based feedback; personalised recommendations; AI-generated educator insights
Upgrading the Platform	Analytics-driven decisions; usage data; teacher feedback; classroom observation; pedagogical alignment; competitive analysis	Continuous deployment; A/B testing; pilot rollouts; structured user research; multi-year product vision
Broader Ed-Tech Insights	Parent persona; jobs-to-be-done framing; user advocacy; small everyday frictions matter most	Skills-based learning; micro-credentials; enterprise integration; hybrid access; mobile-first
Emergent Themes	Teacher workload; human-centred design; trust in AI; workflow-first design	Teacher workload automation; transparency of AI; integration as infrastructure
Other	Persona architecture (4 roles); business landscape as driver	Content ownership; quality assurance for user-generated content

Both experts emphasised that accessibility is a non-negotiable baseline in their organisations, not an afterthought. The industry partner, operating under the European Accessibility Act, must comply with accessibility standards; deferring to it is not an option. Both confirmed that leading organisations integrate accessibility from the design and engineering phase, not as a post-release fix.

RG stated: “Anything that is going out from a platform perspective is ensured that it meets the WCAG 2.1 AA standard. We partner with an external firm that does our design reviews, and I am an accessibility certified specialist for my team.”

EI added: “We strive to meet WCAG 2.1 AA standards across the platform, and we regularly test with third-party accessibility experts and assistive technologies such as JAWS, NVDA, VoiceOver, and TalkBack.” EI also detailed practical implementations, including keyboard-only navigation, high-contrast UI, captioning, transcripts, browser zoom support, and avoidance of non-standard plug-ins.

Individualisation was the most discussed theme, covering both learner adaptivity and teacher tools for differentiated instruction.

RG highlighted the classroom challenge: “In a class of 20 students, a teacher cannot give personalised attention to each and every student. So how do we augment AI and build AI in a way which allows this personalisation without taking away the most important thing that teachers do best – which is teaching.” RG’s model uses assessment data to guide teacher-orchestrated interventions, emphasising that K-12 individualisation is teacher-driven rather than student-led.

EI described a platform-level individualisation architecture for lifelong learning, adaptable to schools, including self-paced courses with flexible deadlines, AI-driven content recommendations, diagnostics and skills dashboards, and role-specific learning paths, along with frequent, low-stakes assessments for feedback.

EI noted: “Our core learning model is already highly individualised: learners can choose what, when, and how they learn, within the structure set by the institution or employer.”

Both agreed that individualisation should be teacher-guided and data-informed, not fully autonomous, especially for younger learners. For preschool and school platforms, it operates at two levels: (1) teacher tools for differentiating content delivery, and (2) student-level adaptive experiences.

Both experts framed AI as an emerging field where best practices are still evolving. RG highlighted productive K-12 applications such as early literacy support, AI-summarised student responses (with teacher review), AI-assisted lesson planning (teacher-edited), and

system integration, emphasising: “We don’t recommend replacing teachers, but we want to enhance the experience and cut down the workload of teachers.”

EI described a scaled AI ecosystem, including an embedded AI learning coach (answering questions, generating summaries, supporting quizzes), AI-assisted grading with dispute mechanisms, personalised content recommendations, and AI-generated insights on engagement and skill gaps.

Both stressed the non-negotiable “human-in-the-loop” principle: AI must augment, not replace, teacher judgement, ensuring transparency and control. In schools, where students learn from how adults use tools, this builds trust among teachers, parents, and regulators. The industry partner is in the early stages of AI adoption, and experts confirmed that now is the time to invest in piloting.

Both experts outlined scalable practices for platform evolution, relevant to the Latvian platform’s shift from a content library to a lesson-creation tool. They confirmed this direction aligns with market trends but requires a deep understanding of teacher workflows before design.

RG emphasised a multi-signal approach for upgrading platforms. Teacher/district feedback, classroom observations, user research, and analytics (adoption, frequency, feature engagement) are important. Alignment with curriculum, pedagogy, and the competitive landscape is also playing an important role. RG explained that “When I am working on anything new, I would go into our analytics tool, and I would see that, previously, what was the adoption? What is the frequency of use? If it is a feature upgrade, how was the old feature adopted and used?”

EI highlighted a structured release process for new features that includes continuous deployment, A/B testing, pilot rollouts, and real-time monitoring. For lesson-creation tools, teacher-facing authoring tools are critical: “Authoring tools encourage accessible content creation–structured headings, captions, transcripts, quiz formats for assistive technologies.”

The key takeaway about platform development was said by RG: “Big problems, everybody is going to come and jump and help. It is the small, everyday problems or challenges that are most crucial, and that makes for a smooth experience. How easy the platform is for teachers – or for anybody – to understand, how easily they can access the content that they want to.

And how easy it is for them to promote your platform. Because if I like something, I am going to talk about it."

Both experts reflected on the wider EdTech landscape, offering strategic context relevant to the Latvian platform. EI identified five major trends shaping current investment, such as skills-based learning, AI-enhanced personalisation, micro-credentials and modularity, enterprise integration, and flexible hybrid access, most of which originate in lifelong learning but are gradually applicable at the school level. The parent-facing dimension is also mentioned as well, as RG noted that their organisation recently introduced a parent persona as a competitive differentiator, reflecting growing demand for visibility into children's learning experiences.

Neither expert was prompted on teacher workload, yet both returned to it repeatedly and independently. RG framed the entire AI agenda around reducing administrative burden; EI described AI tools as explicitly designed to support busy educators by automating feedback and surfacing insights. This convergence across two very different platform contexts suggests that teacher workload is the single most powerful lever for platform adoption. It is a finding that reinforces the central argument of this research.

Both experts also emphasised the importance of systems integration, such as assessment data informing curriculum recommendations, teacher dashboards reflecting student activity, and admin reports aggregating across classes. AI is only as useful as the data it can access and connect.

Several observations fell outside the predefined codes but carry strategic weight. RG described a four-persona model of administrators, teachers, students, and parents operating across district, school, and class levels, which informs how the platform will need to structure access and permissions as it grows. RG also noted that competitive analysis, not teacher requests, typically drives AI feature decisions. This is a useful reminder that strategic product choices must be informed by the broader ecosystem, not only by direct user feedback. The question of user-generated content was raised by both experts in different ways, but it remains unresolved: if the platform moves toward teacher-created materials, quality assurance, copyright, and curriculum alignment become significant design challenges.

RG closed the interview with an explicit advocacy for human-centred design by ”keeping users at the centre of your decision-making.” RG’s description of user research, classroom observation, and structured feedback loops reflects the same ethos in institutional form. For the industry partner’s platform, this means that no major feature should be designed without first observing how teachers actually work.

4.9. Industry Partner Validation: Findings, Feedback, and Implications

The research concluded with a presentation to the industry partner’s Project Director, covering the full research journey from the initial interview and autoethnographic exploration through the service blueprint, stakeholders map, teacher workshop, prioritisation matrix, and expert interviews. Proposed solutions were presented across four domains and categorised by impact and effort. The full set of presentation slides and meeting notes is available in Appendix X.

The conversation was candid and constructive. The Project Director clarified early that the digital platform falls only partially within his direct area of responsibility, and that the findings would carry most weight when shared with the platform team lead. This is an important contextual note: the feedback received reflects a strategic perspective rather than operational decision-making.

The overall reception was positive. Most findings were not surprising to the industry partner, which was framed not as a limitation but as a validation. The research had identified real, known problems rather than invented ones. The value the industry partner saw was in the external, structured framing of those problems through a service design lens, and in the practical categorisation of solutions by effort, time, and impact.

Three concrete directions emerged. First, a direct handoff of findings to the platform team lead. The Project Director explicitly identified this as the most actionable next step. Second, the Project Director expressed genuine interest in developing a lightweight, reusable user research template that the platform team could use independently, which could serve as a potential practical legacy of the collaboration, moving beyond a one-time study toward an embedded research practice. Third, the company is using the next three to four months as a prioritisation decision window, with the impact-effort matrix contributing to what is on the table.

One limitation is worth acknowledging explicitly: the primary contact was not the platform's direct decision-maker. Future collaborations of this kind would benefit from involving the platform team lead earlier in the process, or building a structured handoff mechanism into the project design from the outset.

This meeting marks the end of the Deliver phase and, with it, the completion of the Double Diamond. The research has moved from broad discovery through problem definition, co-created proposals, expert validation, and stakeholder delivery. What it has not done, and does not claim to do, is prototype, test, or implement the proposed interventions. The second diamond concludes with a prioritised, evidence-based set of service design proposals and a validated decision-making framework. Implementation, iteration, and measurement of impact remain the natural and necessary next steps, representing a meaningful direction for future research and practice.

The patterns confirmed and the directions identified in this meeting form the empirical foundation for the Discussion chapter's analysis.

5. DISCUSSION

This chapter connects the findings to the five research questions and theories, summarising and interpreting results for the industry partner, teachers, and education service design. It concludes by revisiting the research gap and showing how the findings begin to address it.

5.1. How CTeachers Experience the Platform as a Service (RQ1)

The first research question explored teachers' experiences with the platform regarding usefulness, ease of use, and fit with their workflow. Findings showed a nuanced view: teachers generally saw it as useful and valuable, but questioned if it fully met their needs and expectations.

This finding maps directly onto the Technology Acceptance Model (TAM), specifically the distinction between Perceived Usefulness (U) and Perceived Ease of Use (E). As Davis (1989) originally proposed, both constructs shape whether people adopt and continue using a technology, and this study confirms that relationship in a school context. Teachers rated the platform’s core functions, such as digital textbooks and formative assessments, highly for usefulness, as they use them daily. Their ease-of-use evaluations were considerably more variable, particularly in their focus on content gaps, navigation between sections, the lack of a unified content view, and the additional effort required to find and assign content and to follow the progress of specific students or classes in real time. They see the potential to help minimise the workflow, but it’s not always working as intended from the platform’s side.

However, the standard TAM formulation does not fully capture the role of contextual factors. Extensions of TAM that incorporate workload and organisational support (Lee et al., 2025) are more directly applicable here. Teachers linked ease of use to platform design and workflow fit, avoiding features that add unnecessary steps. A teacher chooses not to use features that require multiple confirmations or to keep in mind all the aspects when working with SIS-related features. This is a cognitive cost to coordinate digital tools in a live teaching environment. It helps to explain why some platform features that exist and work technically are not always used in practice: the feature is available, but its cost in a live classroom might exceed the benefit.

A related finding concerns feature awareness, which proved to be as significant a barrier as usability itself. The heatmap analysis from the co-creation workshop showed that a substantial portion of the industry partners' offering, for example, printed posters, formative assessment trackers, the digital geography atlas, and the tool for creating formative assessments, was unknown to most participants. The real-time student tracker, meanwhile, was proposed during the workshop but later identified by the Project Director as already in existence. Also, the industry partner mentioned that the heatmap effectively represents the features they have been promoting as better known to teachers. This is not primarily a usability problem. A feature cannot drive adoption if users do not know it exists, and TAM's U construct assumes that awareness already exists.

The equity dimension of platform experience also deserves attention. Teachers in subjects with rich, well-developed content, such as Mathematics or Physics, reported consistently higher engagement than teachers whose subjects are underrepresented on the platform. For a music teacher or a geography teacher, the platform's core value proposition of saving preparation time does not apply equally. This variability in perceived usefulness with content availability is not captured by TAM alone, underscoring the need to coordinate platform design improvements with continued investment in content development for underrepresented subjects and grade levels.

5.2. Strengths and Gaps, and Their Alignment with Strategic Priorities (RQ2)

The second research question asked about the key strengths and service gaps teachers identify, and how these align with the industry partner's strategic direction. The workshop findings and the service blueprint make this comparison visible in a structured way.

The most consistently mentioned strength was the depth and quality of the platform's content in the subjects and grade levels where it is most developed. This is exactly the value proposition the industry partner has built its identity around: a comprehensive blended teaching ecosystem rather than a collection of separate tools. The research confirms that this positioning resonates strongly with actively engaged users. Trust in material quality has been built since the industry partner began as a book publisher in the 1990s.

However, the research also reveals a structural tension that the design-reality gap framework (McCarthy et al., 2021) helps to name precisely. The industry partner's strategic vision emphasises comprehensiveness as a platform that can support teaching from the start of the

academic year through to the final summative assessment. But from the teacher's perspective, the challenge is rarely whether the content or tool exists. It is whether they are accessible at the specific moment when needed, quickly. Teachers described knowing that the platform had the content they were looking for, but spending time trying to find it because the navigation logic did not match their mental model of how a school subject is organised. The platform is built around content categories, while teachers think in terms of subjects, grades, topics, and school days. This is the structural misalignment.

The Project Director's perspective highlights that the industry partner recognizes varying engagement levels and seeks understanding. While the internal view focuses on feature development and content expansion to address engagement, the teacher workshop suggests that improving information architecture, interface consistency, and workflow could quickly boost engagement for teachers with existing content. For others, creating new materials remains a priority. This doesn't contradict the company's strategy but refines it based on user evidence, aligning with service design's strengths.

A significant alignment also emerged from the research: teachers' desire for personalisation and differentiation tools maps directly onto the industry partner's interest in expanding the platform's adaptive capabilities. Workshop participants repeatedly requested the ability to assign differentiated content to individual students, to clearly see individual progress, and to personalise the teaching materials to match their instruction style. These requests point toward the same strategic direction the company is already considering for the future, such as AI-assisted features and a restructuring of the platform's information design. This research provides teacher-grounded evidence for that direction and helps prioritise which aspects of personalisation matter most to users in practice.

It is also worth naming the gap that most explicitly connects to the design-reality framework: the company promotes what it has already built; teachers most urgently need what has not yet been built, particularly at upper secondary school levels. This divergence in priorities is known and well-explained from both sides, but it is not yet resolved. It is the most structurally important finding in relation to RQ2.

5.3. What Improvements Teachers Propose and What They Reflect (RQ3)

The third research question asked what specific improvements teachers propose and what underlying needs and service design principles these reflect. The co-creation workshop

produced 35 proposals, which participants prioritised, and the Project Director scored them on impact and effort. Rather than reviewing each individually, this section focuses on the underlying patterns and what they reveal.

The most frequently appearing theme across all 35 proposals was the need for better integration and reduced switching. Teachers wanted existing features to work together more smoothly by combining book content, learning activities, and tests into a single topic view, reflecting how teachers typically plan lessons, rather than introducing new content. This is a service design problem more than a content problem. It can be addressed through information architecture improvements without requiring new materials, and it would benefit every user, regardless of their subject or level of engagement.

A second pattern was the need for better feedback loops, for both teachers and students. Teachers wanted a glanceable view of student progress in real time as well as automated grading systems for final tests. From the teachers' perspective, students needed more immediate feedback on the tasks so they would not always have to wait for a response. The design implication is to make the most relevant information more visible and accessible at the right time.

A third pattern was the invisible workload of teaching. Many proposals were essentially attempts to reduce the cognitive and administrative burden of managing a class through the platform. The requests for persistent subject-level filters, for the platform to remember user preferences, and for reducing the number of clicks needed to complete routine tasks, all of these reflect what the UTAUT framework calls Effort Expectancy (Venkatesh et al., 2003): the degree to which users expect a system to be easy and efficient to use. When the platform adds to the teacher's load rather than reducing it, disengagement follows. These are not motivation problems. They are design problems with identifiable, solvable roots.

Viewing these patterns through a service design lens reveals that many of the 35 proposals function as small, well-placed design changes that make the desired behaviour easier without requiring conscious effort from the user (Lüken-Klaßen & Kötting, 2024). The persistent subject filter at login, the topic-level unified view, and the timeline showing where a class is in the curriculum all reduce friction and make the right action the easier one. This reframes the proposals not just as a feature wish list, but as a set of behavioural design interventions grounded in how teachers actually make decisions under cognitive load.

5.4. How Teacher Proposals Compare with Research and Expert Insights (RQ4)

The fourth research question asked how teacher proposals compare with insights from existing research and expert experience in platform development. The answer is that there is strong consistency at the level of principles, but meaningful divergence at the level of priorities and specificity.

The research literature on teacher engagement with educational platforms consistently identifies perceived usefulness, ease of use, low workload, and institutional support as the main predictors of sustained adoption (Cukurova et al., 2023; Khong et al., 2022). The teachers in this study described exactly these factors in their own language. They said things like: it needs to save me time, not take more of it; it needs to make sense to students without me having to explain the tool itself; it needs to connect with the systems I already use. The core principles of technology acceptance appear universal, even when the specific national and institutional contexts differ significantly from those in which the research was originally conducted.

Teachers' proposals go beyond standard literature in their context-specificity. While academic texts discuss platform design in broad terms like usability and accessibility, the workshop added detailed insights from working within a specific national curriculum, textbooks, and grade levels. For instance, organising upper secondary materials by proficiency levels relates directly to the 2018–2019 Latvian curriculum reform. Such insights fill the research gap identified earlier, providing empirical evidence from a specific national and linguistic context rather than generic EdTech settings.

The expert interviews provided an external benchmark useful to the industry partner and for situating the findings in a broader professional context. Both RG and EI described their organisations that treat accessibility as a non-negotiable baseline, invest heavily in iterative development and AI-enhanced personalisation, and structure their decision-making around multi-signal evidence from usage data, classroom observations, and structured user research. These platforms are significantly larger in scale and better resourced than the industry partner. However, the principles they described, such as understanding the user's workflow before designing for it, reducing the cognitive burden of routine tasks, and building human-centred, are not scale-dependent. They are design principles that apply equally to any blended learning platform.

The most revealing comparison between teacher proposals and expert insights concerns AI. Both experts described significant, ongoing investment in AI-driven personalisation, adaptive assessment, and learning assistants. Teachers in the workshop mentioned AI primarily in two specific use cases: automating the grading of final tests and providing in-platform hints to students who are stuck. These are narrower applications than those described by experts. This may reflect current AI literacy among Latvian secondary school teachers or a pragmatic focus on the most useful applications. Either way, it suggests that the industry partner's path toward AI integration should be grounded in specific teacher-identified needs and built on a human-in-the-loop principle.

One priority overlap is worth highlighting: teachers need more content, personalisation, and a text-entry feature in worksheets. The industry partner also focuses on creating missing content and developing a system aligned with teachers' workflow. Teachers face immediate issues with content gaps and worksheet problems, while the partner emphasises content creation and workflow solutions. Content gaps affect underrepresented subjects, and personalisation is a long-term goal. Both are valid priorities. The prioritisation matrix from this research provides a framework to manage both effectively.

Accessibility findings highlight WCAG 2.1 AA as an organisational baseline, with EU directives requiring accessibility in Latvia as well. Autoethnography revealed that basic tools such as contrast, magnification, and text-to-speech are hard to find, exposing a design gap. While regulations demand accessibility, recognising learners' diverse needs arising from disabilities, temporary impairments, or situational issues is key. Implementing features like screen readers, adjustable text, and captions helps remove barriers and supports flexible learning. Expert EI described a platform that uses continuous deployment and real-time monitoring to quickly identify and fix problems, with feature decisions based on usage analytics, user research, and pedagogy. This systematic approach isn't easily replicable by small companies, but the core idea that platform decisions should rely on actual usage data and real user feedback is applicable. The research suggests that the industry partner develop simpler, more structured ways to collect and act on teacher feedback, compared to large EdTech organisations.

5.5. Interventions to Support Teacher Engagement (RQ5)

The fifth research question asked what interventions could address the identified gaps and support more consistent teacher engagement with the platform. This is where the research moves most directly from analysis to recommendation, and where the service design approach proves its value most clearly.

The most important implication of this research is that the platform already has enough features to significantly increase teacher engagement if those features are made more accessible and better integrated. This is a different starting point from the assumption that more content or more functionality will solve the engagement problem. The research shows that for many teachers, the platform already offers more than they currently use. The service design challenge is not to add to this, but to reduce the distance between what the platform offers and what teachers can reach within their daily workflow.

The 35 proposals consolidated through this research, prioritised through the impact-effort matrix, and validated by the Project Director and international experts, represent a structured design brief for the industry partner. Quick wins hold nine proposals requiring days to weeks of implementation and include fixes that are technically straightforward but have high daily visibility: eliminating scheduling errors for tests, making icons permanently labelled, ensuring teachers always see content in teacher view when opening links from the school information system, and correcting mathematical errors in tests. These improvements require minimal investment but address the small, recurring frictions that might compound into disengagement over time. As RG noted during the expert interview, it is the small everyday problems, not the large ones, that determine whether a platform feels smooth or frustrating.

The major projects category fits nineteen proposals requiring up to a year or more. It contains the interventions with the highest strategic significance. Combining book content, learning activities, and tests by topic into a single unified view is the most widely requested and most structurally impactful change in the under-a-year group. Automating final test grading and connecting it to the SIS addresses the platform's most visible broken promise to save teachers' time, precisely when it matters most. Organising upper secondary materials by proficiency level rather than grade number aligns the platform with the Latvian curriculum reform's actual structure, but needs further exploration of solutions, as not all schools are using the reformed division. These are not feature additions. They are corrections to the

structural misalignment between the platform's design logic and the teacher's operational reality.

A third implication concerns the industry partner's processes, not only the platform's design. The research revealed a communication gap between teacher needs and platform development decisions. Teachers have detailed, actionable ideas about how the platform could better serve them. Most of them were confirmed by the industry partner as known. A structured channel for collecting, prioritising, and acting on this feedback helps these insights be more invisible to the development team. The Project Director's own suggestion during the validation meeting to develop a lightweight, reusable user research template points in the right direction. Embedding a user research practice into the platform team's regular workflow, even in a simple form, would be a significant and durable service design contribution.

Finally, this research surfaces a structural distinction that the industry partner may find useful in allocating its resources. Training programmes address knowledge gaps for teachers who do not know that a feature exists or how to use it. Design improvements address friction gaps and teachers who know what the feature does but find it costs more effort than it saves. Both types of barriers are real and present in this study. But they require different responses. A clearer separation between training investment and design investment, tied to different diagnoses of why engagement is low, would allow the company to direct its resources more precisely.

Teachers' disengagement reflects design friction rather than lack of will, a pattern consistent with documented adoption barriers (Ali, 2024; Porter & Graham, 2016), and the proposed interventions function as the autonomy-respecting nudges and motivational enablers that the literature identifies as most effective in shifting teacher behaviour, such as recognition of value and training quality (Dahri et al., 2024; Ibrahim & Nat, 2019).

The design challenge was: How can we redesign the teacher's platform experience so its full potential is accessible during a school day? The research provides a grounded answer. The redesign doesn't require building from scratch but involves three moves: making existing features easier to find with role-based filtering and a unified view; reducing routine actions to speed up use during lessons; and improving communication between teachers and developers to address friction continuously. Quick wins target daily frustrations; major

projects fix structural misalignment; and research infrastructure surfaces future gaps early. The school day's constraints—time, multitasking, limited support, and cognitive load—limit the platform's usefulness. These proposals acknowledge those constraints, making them distinct from a feature wishlist.

5.6. Returning to the Research Gap

This thesis was motivated by a research gap identified in Chapter 1: that teacher-side engagement with blended learning platforms in primary and secondary school contexts is underexplored, and that virtually nothing is known about this phenomenon in small-country, single-language markets such as Latvia. The findings of this study begin to fill that gap, though they do not close it.

Teacher engagement in Latvia is influenced by factors like perceived usefulness, ease of use, workload, support, and content quality, aligning with TAM and UTAUT. The study also highlights context-specific factors, such as the link between platform content development and the national curriculum reform cycle, affecting engagement depending on reform-aligned materials. Additionally, municipal or school subscription decisions influence access, and Latvia's linguistic homogeneity means no English-language curriculum alternatives, creating a unique platform relationship compared to larger, multilingual markets.

The research gap has therefore been partly addressed and partly redefined. This study provides the first structured empirical account of teacher engagement with a blended learning platform in the Latvian context. It also shows that this context is distinctive enough to warrant dedicated, continued research not just as a curiosity about a small country, but as an example of how national curriculum cycles, tight teacher community networks, and a single-provider educational market create platform dynamics that general EdTech research does not capture.

The study shows that service design methods like co-creation, service blueprinting, and stakeholder mapping effectively investigate and boost teacher platform engagement beyond technology acceptance surveys. Combining educational technology frameworks with service design methods yields findings that are both grounded and actionable. This approach is valuable as it can be applied to other small-market, curriculum-specific EdTech studies.

6. CONCLUSIONS: TOWARDS A TEACHER-CENTRED BLENDED LEARNING ECOSYSTEM

6.1. Answering the Main Research Question

This thesis set out to answer one central question: how can service design be used to identify and address the gaps between what a blended learning platform offers and how teachers actually engage with it in everyday school practice?

This research finds that the engagement gap isn't mainly about motivation, training, or technology, but rather a design problem, a misalignment between the platform structure and teachers' work. The platform is built around content and company logic, while teachers think in subjects, grades, and days. Service design, through co-creation, blueprinting, mapping, and validation, reveals this misalignment and guides the development of targeted solutions.

Three gaps were identified: awareness gaps, where teachers don't know all platform capabilities due to poor communication; friction gaps, where existing features are bypassed because they require too much effort; and content gaps, where the platform's value in saving teacher prep time varies across subjects, especially in underdeveloped areas.

Service design interventions can address all three. The 35 proposals, prioritised through an impact-effort matrix and validated by experts, form a design brief. The impactful interventions involve reorganising existing features, reducing unnecessary steps, and revealing the platform's full potential to teachers, without building anything new.

6.2. Research Objectives

All seven research objectives were addressed in the journey of this study. The industry partner was engaged at the start and consulted throughout, providing strategic context, usage data, and feasibility evaluation. An autoethnographic exploration of the platform surfaced usability, accessibility, and content issues from an informed user's perspective. A service blueprint and stakeholder map made the platform's service system and its wider actor network visible in a structured way. A co-creation workshop with seven secondary school teachers positioned teachers as active co-designers rather than passive research subjects. It all resulted in 35 grounded proposals for improvement, which the Project Director evaluated for feasibility and impact, producing a prioritised working brief. Two expert interviews tested and refined the proposals against international experience in comparable EdTech

contexts. The findings were translated into a design deliverable and presented to the industry partner, resulting in two concrete next steps: a handoff to the platform development team and the development of a reusable user research template.

The study lacked formal hypotheses due to its qualitative, exploratory approach. Nonetheless, the core assumption that teacher disengagement stems from design-reality gaps, rather than from a lack of motivation or digital skills, was consistently supported. Low-platform-usage teachers weren't unwilling but faced content gaps and friction, making full engagement less beneficial.

6.3. Contributions and Implications

This thesis makes three contributions. It provides one of Latvia's first structured accounts of teacher engagement with a blended learning platform, addressing an overlooked area in international educational technology research. The study uncovers an underexplored phenomenon and sets stage for future research in Latvia and small-market contexts. Globally, teacher engagement with blended platforms in primary and secondary education remains underexplored, especially in small, single-language markets with interconnected platform design, curriculum, and teacher communities. Latvia's unique context includes a reforming curriculum, close-knit teacher community, few local platform providers, and no national data on digital tool use. This empirical work highlights an invisible phenomenon, paving the way for future studies.

The study produces an actionable set of service design interventions for a real platform, based on teachers' feedback, industry feasibility, and expert testing. The prioritisation matrix helps the industry partner identify quick wins, near-term projects, and strategic directions instantly. This evidence-based, co-created design bridges academic research and organisational action.

Methodologically, the study demonstrates that service design methods effectively explore teacher engagement with EdTech platforms in schools, an area primarily studied in higher education or healthcare. Combining co-creation, service blueprinting, stakeholder mapping, and technology acceptance frameworks yields actionable insights beyond those from surveys. Using the Double Diamond framework across four phases provides a replicable process for similar small-market, curriculum-specific studies.

6.4. Areas for Future Research

This study opens more questions than it closes, which is appropriate for a first exploratory study in a context that has not been systematically researched before. Several directions for future work are particularly valuable.

The next step is to prototype and test the proposed interventions, which are based on evidence rather than tested solutions. Prototyping top proposals, conducting usability testing with teachers across subjects and engagement levels, and measuring if the changes improve engagement would follow the second diamond. This could be a joint project with the industry partner or an independent study on one or two high-impact proposals.

A second direction is larger-scale quantitative research on engagement patterns. This study involved a small group of motivated teachers from one school. Future research could use the platform's usage data and teacher surveys across more schools, subjects, and grades to validate and refine teacher segments and assess if design interventions change engagement after implementation.

Third, this study excluded the student perspective, who ultimately depend on teachers' use of the platform. Future research should explore how teacher engagement affects student experience and outcomes, and should design interventions that include both teachers and students to better inform platform investment decisions.

Fourth, as the industry partner expands across the Baltic, a comparative study of Latvia, Estonia, and Lithuania would offer academic and strategic value. While the three countries share similarities in their education systems, they differ in curriculum, language policy, and digital infrastructure. Studying teacher platform engagement could yield insights valuable for the company's expansion planning.

School leadership's role also warrants more attention than this study offers. The principal who arranged access to the workshop played a key part in fostering teacher engagement with the research and platform. Future research should explore how school leadership influences the adoption of digital tools and which support structures best promote consistent platform use. This issue, at the crossroads of service design, educational management, and organisational change, remains underexplored in Latvia.

To conclude: the problem this thesis set out to examine, the gap between what a well-designed educational platform offers and what teachers actually do with it, is not going to be solved by any single study or intervention. But it can be reduced, step by step, through research that takes teachers seriously as the primary users of these tools, designs with them rather than for them, and measures success not by the number of features a platform has, but by the quality of the experience it enables in a real classroom on a real school day.

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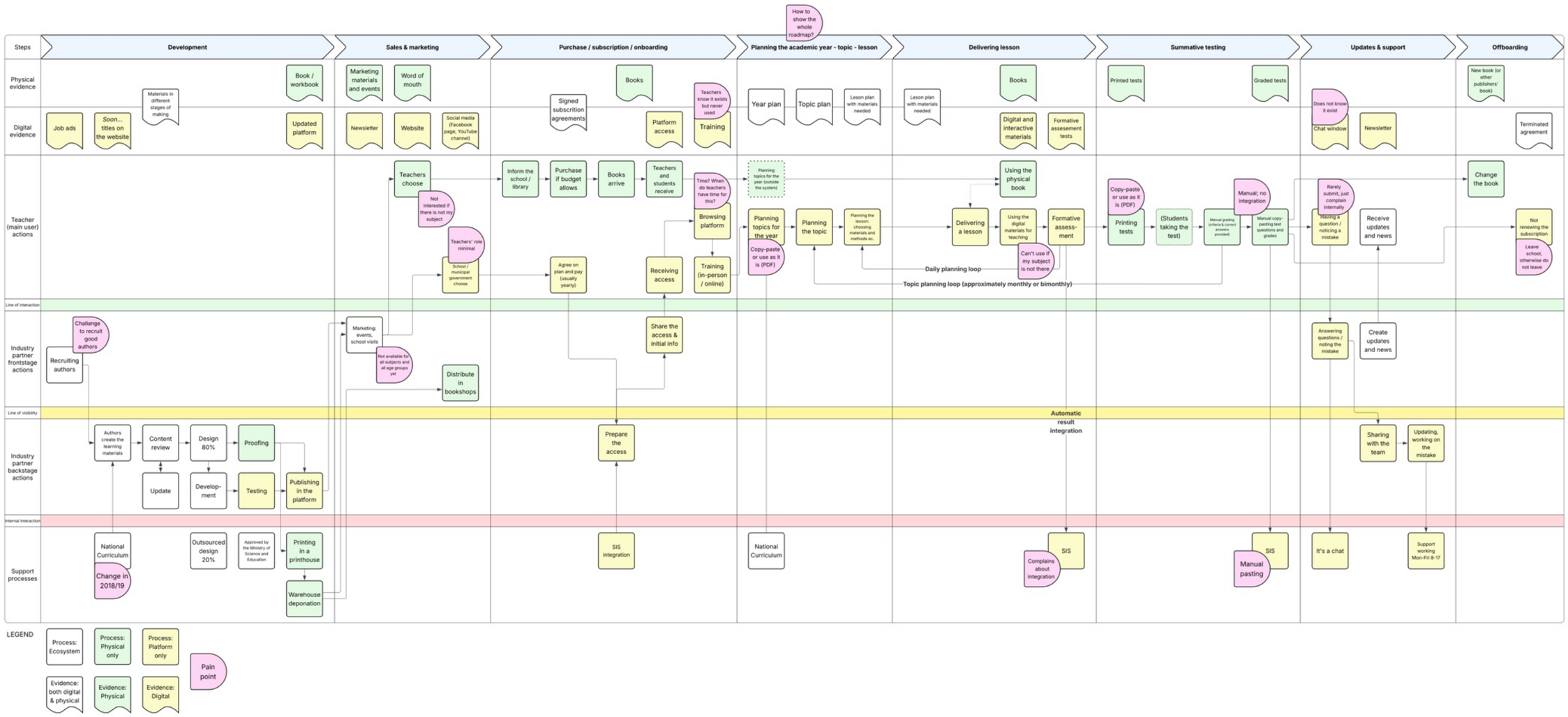
APPENDICES

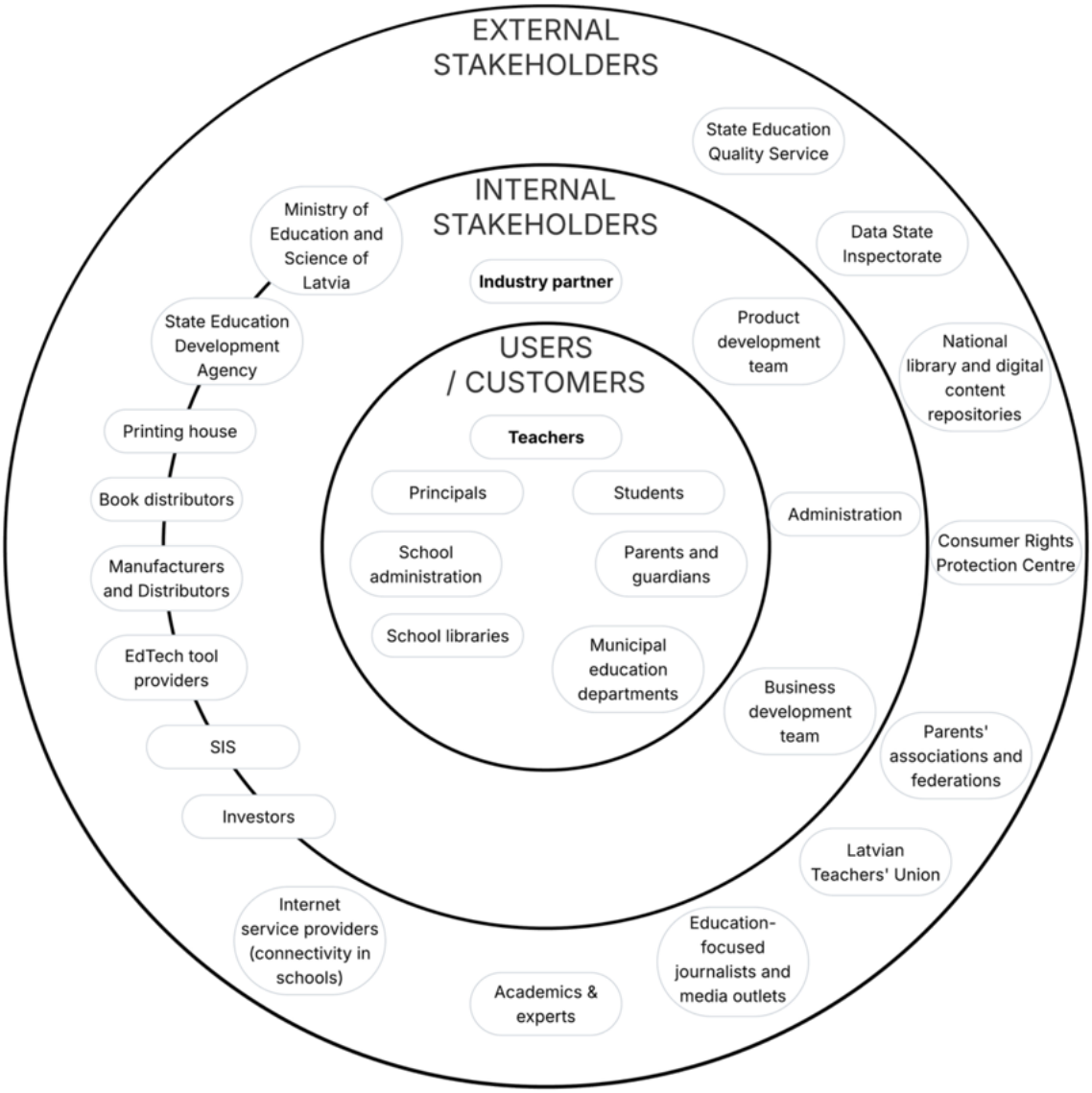
LIST OF APPENDICES

Appendix I. Service Blueprint.



Based on Stickdorn et al. (2018) guidelines on how to build a Service blueprint. Service focus: Teacher-mediated use of the learning environment. Main user: Teacher.

Appendix II. Stakeholders Map.



Stakeholders that lie between the Internal Stakeholders and External Stakeholders represent business partners of the industry partner and other players that are closely connected to the company but do not participate in everyday tasks.

Based on Stickdorn et al. (2018) guidelines on how to build a Stakeholders map.

Appendix III. Initial Meeting with the Industry Partner: Notes.

February 2026

The industry partner's central objective is the learning curriculum, and the teacher is the primary user of the products it provides.

It is about student-centred learning, but the main user of the products is the teacher. It can be called a teacher-led learning process. If there is no teacher, students are not the users of the products (Note: Which makes a service when put together).

The central question they try to answer: How might we support the teacher in the changes that will never end?

Products – all of them helping teachers to be ready:

1) Ready for the lesson in terms of year, topic, current day and lesson. All topic outlooks, including learning outcomes, tools, and resources, are indicated. Used to have "extra" lessons planned, but during the development of the products, discovered that it is unnecessary as teachers struggle to cover basics because of missed lessons due to illnesses, excursions and other extracurricular activities.
2) During the learning process, like learning materials, books, worksheets, digital copies of all materials, different online resources, and adapting to the needs of the classroom.
    a. Are there any digital tools, like phones, available? Are students working on tablets or computers? Is there an interactive screen in the classroom? For example, students are not allowed to use mobile phones in the classroom until grade 6 in Latvia.)
    b. It is well-thought-out – 2 pages in one book or workbook opening are for one lesson. Easier and more effective to work with.
    c. Digital resources in the industry partner's digital platform: audio, video materials, digital versions of everything existing in paper and beyond.
    d. Formative evaluation toolset from tests themselves up to the system to follow each student's individual progress – the teacher can see every test, answer, etc.

3) Summative evaluation support as a final test for each topic, printable with the evaluation criteria and pointing, usually 2-3 test variants.

Next steps: The Project Director will follow up with his team and product developers and will get back to me.

My thoughts after the meeting:

1) A service blueprint will be necessary to build a way to lay out the scope of the service the company is providing. Detailed if this is their need. Less detailed if just giving the main understanding. Including: teachers (technologically savvy and less advanced?), students, backstage.
2) They have done design-thinking-related activities already. For example, they have discovered the needs of each stage of the development of the product and how to make the transfer of each product the most efficient, with the least possible friction between teams. I think there is a potential for implementing what I will find.

Appendix IV. Semi-structured Interview with the Industry Partner: Notes and Analysis.

Meeting notes

February 2026

I started the meeting by providing a background on myself and my previous experience with the education system and industry partners' products, tools, and services.

I came prepared and rechecked several key points in the platform with the industry partner.

Digital textbooks are organised by subject and curriculum. For each subject, they follow both the standard curriculum and our own customised curriculum, with the goal of meeting the standards.

A smart textbook isn't a book, but you can scroll through it; there are videos in the middle, and tasks are integrated–by answering them, you can get immediate feedback. With each topic, the student tracks their own progress.

In this case, the student works independently; everything is linked to SIS. If a teacher assigns a task to the class via SIS–and then students log in through SIS, click, and enter–teachers can see what's happening.

There are also tests–as a teacher, I can create everything myself from a question bank, which contains about 50,000 questions in total.

Major exams: each topic has its own summative exam. Two versions: printable and handwritten. Includes prepared grading criteria and descriptions of performance levels for assigning points.

We don't have materials for all grades yet, nor for all subjects. Solutions are in the works–it's slowly coming together. There's more for elementary school. There aren't and won't be materials for foreign languages, as there are other, international players in that space.

The core problem for users that we aim to solve with our teaching ecosystem:

1) Save time on preparation and the process of getting ready for class, so more time can be devoted to the class and the children rather than preparation. This is the main thing we want to address!

2) We select teams of authors who bring their ideas about modern processes to life through real-world examples in schools. Are assessment criteria important? – We provide ready-made ones. The lesson's learning outcomes are important – and we offer exactly how to implement them through our product's tools and resources. Formative assessment would take a lot of time if done manually on paper, but here we have a ready-made solution.

Quality is important to us–a book isn't just a collage with a rooster; it also needs to look modern in terms of design. It needs to be well-crafted and of high quality. You can slap something together, or you can do it right.

We've named our product suite ***–it's like a teaching ecosystem. That's also how it's referred to in the master's thesis research.

What sets us apart from competitors? The quality of the content, and the fact that the materials are both physical and digital.

How do teachers become users? The platform is subscribed to by the school or local government. We worked on it to demonstrate it to teachers. Subscriptions are typically for one year. Everything is integrated with e-class–teachers, students, and parents log in. Parents and students see the platform the same way. Books are promoted through: school visits, seminars, webinars, and conferences. There are no ads on YouTube. We have our own YouTube channel where webinars are posted. We also visit school curriculum specialists.

New subscribers are sometimes trained in person, sometimes remotely; we show them everything.

Subscriptions start at the school. Often, there's a workshop with teachers. They're given a trial version–after a while, the principal asks if we need it. And then we agree. Local governments usually pay for it, including through targeted grants from the Ministry of Education and Science. The local government signs the contract or provides the funding.

Teachers usually decide on the books themselves, together with the librarians. The teachers make the recommendations–the librarian compiles them–and then an agreement is reached with the administration based on available funds.

About 80% of schools subscribe to the platform; it has been as high as 85%. Most likely, they use other resources as well, such as uzdevumi.lv and other learning platforms.

It is integrated with all communication platforms used in Latvian educational institutions. Teachers can assign tasks by logging in, and student grades are imported automatically. Formative assessment is imported as percentages. It also creates exams, though this is more complicated. Currently, information can be copied for major final exams, but not automatically.

How often do you revise tests? Currently, others have 3 versions, but I've only revised one so far. I've only had a teacher account for 2 years. Right now, the focus is on filling in the missing materials for all classes, then I'll think about improving the tests

What works and what doesn't? Teachers do a lot of formative assessment–millions of data points and completed questionnaires. Over the past year, they've begun to implement the concept of full support for teachers. It hasn't really been presented to clients yet as a service that's easy to grasp and understand: that there's a plan, I prepare as a teacher, then the teaching process, assessments–they don't see it all together.

The workflow isn't designed so that I, as a teacher, start preparing in a logical sequence. Plans are usually put together in August and that's it. Plans are currently located under teaching resources. You can copy them from there or use them as is.

There are no textbooks in computer science. (Shows various things on the computer, what they look like, how they work. In Latvian, it shows that there is a textbook, a workbook, and so on.)

Challenge: How to place that flow more purposefully on the user's side. This currently prevents us from seeing the big picture. Internally, we've focused on doing it this way; that's our conviction. There are places to collect those materials. The user can see that experience themselves–they use individual parts but don't see the big picture. This could be changed.

Which subjects use it more? Physics, biology, natural sciences, grades 5–7. It's used less in subjects with less content. As soon as it's introduced, its use increases steadily. Computer science is new–it's not among the top subjects in terms of usage, but it's growing. The more class time it gets, the more intensively it's used. I'll send more precise data.

There are no teachers who start using it and then drop out–only if they leave the school.

How are teachers' opinions gathered? Surveys. It's easy to ask questions on the platform–feedback comes in quickly, they ask when a new topic will be available, and invite corrections. It's available on weekdays from 8 a.m. to 5 p.m. They usually respond fairly quickly. And if they find an error, they fix it quickly. There are also electronic surveys for teachers. When introducing something new, there are focus groups. If many ask when certain material will be available, it becomes a priority for us. If we have to invest in math with 5 hours a week or computer science with 2–it's clear we'll start with math. There are good authors in math, but in music, for example, it's not easy to find authors. All slows down because of limited resources and a limited number of authors who can and want to create teaching materials. They say the pay is good, but it's still not easy to find authors.

How does this affect student performance? The quality of students' answers is evaluated; for example, most students can answer the questions, but they struggle with the third level. Then we look to see if there is anything that needs improvement. The impact on student performance cannot be measured because the data is anonymous and we cannot track each student. Assessment is based on the SOLO taxonomy, although it depends on the subject. It's different in elementary school.

Challenges? There's a shortage of authors. There are no technical limitations.

Automation? Tests are created by people. Maybe AI in the future?

Improve or change? The overall roadmap, so that the client sees it that way too. And cover all materials in all subjects. There will be animations. Work has begun on animations and also on the digital side, so that teachers can review student results in various ways. We plan to give teachers the ability to review data in various ways; we have some of this already, and there is still more to do. (Shows how things look from the teacher's perspective in formative assessment.)

Key themes emerged from directed thematic analysis of the semi-structured interview with the Program Director: identified gaps and who experiences them.

Code	Who experiences it	Quote/basis
Invisible ecosystem logic	Teachers	“They use individual parts but don’t see the big picture”
Deferred onboarding narrative	Teachers/management	“Hasn’t really been presented to clients yet”
Incomplete subject coverage	Teachers	“We don’t have materials for all grades yet”
Author supply constraint	Platform/company	“Shortage of authors”
Anonymous data – no impact tracking	Company/researchers	“Cannot be measured… data is anonymous”
Manual exam data transfer	Teachers	“Information can be copied… but not automatically”
Quality vs. coverage tension	Company strategy	“First fill gaps, then improve tests”
Low visibility of full teacher support concept	Teachers	“There’s a plan… they don’t see it all together”
Subject-based adoption disparity	Teachers	“Used less in subjects with less content”
No foreign language materials	Teachers	Explicitly excluded by design
AI/automation not yet implemented	Platform	“Maybe AI in the future”
Plans made once in August, not revisited	Teachers	“Plans are usually put together in August and that’s it”

Appendix V. Auto-ethnography: Findings Log and Analysis.

Complete findings log

Time	Category	Element	Severity	Finding
00:32	Usability	Platform	LOW	Login remembered; no password stress. Positive finding.
00:59	Usability	Platform	MEDIUM	Platform feels slow to load (may be connection-dependent).
01:32	Usability	Platform	LOW	With menu hidden, icons alone are ambiguous – unclear navigation.
02:37	Feature	Platform	HIGH	No organisation by subject → grade → topic. Navigating same-topic materials is time-consuming.
03:18	Feature	Platform	LOW	No content available if researcher's subject is absent from platform.
04:10	Usability	Platform	LOW	Thematic plans are PDFs – require download + Word to customise.
04:45	Content	Platform	LOW	Teacher e-learning catalogue contains only one course (burnout prevention).
05:57	Content	Platform	MEDIUM	Test interface looks clean but cannot be evaluated without real student data connected.
06:30	Usability	Platform	HIGH	Positive: final test results are teacher-only. Good privacy design.
07:50	Usability	Platform	HIGH	'All materials' section groups by subject-topic – useful but buried and poorly labelled.
08:45	Usability	Platform	HIGH	Platform back button returns to wrong level (workbook list, not subject materials).
09:33	Usability	Platform	HIGH	Browser back button works correctly – inconsistency with platform back button.
10:28	Usability	Platform	HIGH	'All materials' is organised by subject + grade, not by topic. Still messy for navigation.
10:59	Quality	Book	MEDIUM	Good paper quality and design feel. Positive finding.
12:12	Usability	Workbook	LOW	Non-standard size (not A4/A5) – not ideal for photocopying, though not its intended use.
12:45	Usability	Workbook	MEDIUM	Writing spaces are generous – may feel large for some tasks, though age-appropriate.
13:27	Usability	Workbook	MEDIUM	Light red elements may be insufficient contrast for users with visual accessibility needs.
14:01	Usability	Platform	HIGH	Positive: platform responds well to browser text zoom. Good baseline accessibility.
14:55	Feature	Platform	HIGH	TAB keyboard navigation non-functional in Safari. Fails basic keyboard accessibility.
17:03	Quality	Book	MEDIUM	Book feels easy to read and well-designed. Historical–contemporary links are effective.
18:35	Usability	Workbook	LOW	Positive: digital workbook version available on platform – great contingency for forgotten copies.

Time	Category	Element	Severity	Finding
19:45	Usability	Platform	LOW	Two visual indicator systems (dotted lines for smart books, solid for platform content) discovered late – not intuitive.
21:17	Usability	Platform	HIGH	Upper secondary organised by grade number but curriculum uses proficiency levels – creates confusion (e.g., grade 11 biology shown as grade 10).
21:59	Content	Platform	HIGH	Not all subjects or grades have content. Significant gap affecting teacher adoption.
22:49	Usability	Platform	MEDIUM	No subject filter for teachers – biology teachers see all subjects daily despite only needing their own.
24:44	Feature	Platform	HIGH	Accessibility toolbar (contrast, read-aloud) not easily discoverable. Shift+CMD+R showed inconsistent results.
25:49	Feature	Platform	HIGH	No visible magnifier, contrast control, or screen mask. Less intuitive than gov websites.
28:18	Usability	Platform	MEDIUM	Guidebooks in upper secondary listed by grade not level – appears to repeat content across grades.
29:09	Usability	Platform	LOW	Tests section icon resembles a game controller – tone mismatch for a formal assessment tool.
29:47	Usability	Platform	HIGH	Positive: FAQ section well-organised, with live chat support available.

Positive findings:

- Remembered login state: reduces cognitive load at session start.
- Final test results visible to teachers only: appropriate privacy design.
- Responsive text scaling: the platform responds well to browser zoom, a basic but important accessibility baseline.
- Digital workbook available on the platform: an excellent contingency for students who forget the physical workbook.
- Book design and readability: The grade 7 History book is well-designed with strong connections between historical and contemporary content.
- FAQ and live chat support: The help section is well-structured.

Other things noted:

- The test interface looks clean, but cannot be evaluated without real student data connected.
- Non-standard size (not A4/A5) – not ideal for photocopying, though not its intended use.

- Writing spaces are generous – may feel large for some tasks, though age-appropriate.

Logs about challenges under five codes; all are about the platform unless otherwise specified

Navigation	Information architecture	Accessibility and inclusive design	Subject and grade coverage gaps	Teacher-facing tools
With menu hidden, icons alone are ambiguous – unclear navigation. Two visual indicator systems (dotted lines for smart books, solid for platform content) discovered late – not intuitive. Tests section icon resembles a game controller – tone mismatch for a formal assessment tool. Platform back button returns to wrong level (workbook list, not subject materials). Browser back button works correctly – inconsistency with platform back button.	No organisation by subject → grade → topic. Navigating same-topic materials is time-consuming. 'All materials' section groups by subject-topic – useful but buried and poorly labelled. 'All materials' is organised by subject + grade, not by topic. Still messy for navigation. Upper secondary organised by grade number but curriculum uses proficiency levels – creates confusion (e.g., grade 11 biology shown as grade 10). Guidebooks in upper secondary listed by grade not level – appears to repeat content across grades.	Light red elements may be insufficient contrast for users with visual accessibility needs. (Workbook) TAB keyboard navigation non-functional in Safari. Fails basic keyboard accessibility. Accessibility toolbar (contrast, read-aloud) not easily discoverable. Shift+CMD+R showed inconsistent results. No visible magnifier, contrast control, or screen mask. Less intuitive than gov websites. Platform feels slow to load (may be connection-dependent).	No content available if researcher's subject is absent from platform. Not all subjects or grades have content. Significant gap affecting teacher adoption.	Teacher e-learning catalogue contains only one course (burnout prevention). Thematic plans are PDFs – require download + Word to customise. No subject filter for teachers – biology teachers see all subjects daily despite only needing their own.

Appendix VI. Teachers' Workshop: Facilitator's Script and Worksheets

Co-Creation Workshop: Improving the Industry partner Educational platform Together

Duration: 2 hours

Format: In-person (at school)

Participants: 7 teachers from Cēsis, Latvia, working with grades 7-12 and using the industry partner's products and services.

Goal: To gather insights about how teachers use Industry partner Educational platform (the digital platform and books, also teacher trainings), what they don't use and why, pain points, improvement ideas, compatibility needs, and what could be simplified or removed.

Notes for facilitation (that one must keep in mind; added based on previous experience with workshops): Keep time strictly. Encourage concrete examples. Stay in listening mode – avoid defending the platform. Capture insights visibly. Keep energy positive and constructive.

Worksheets translated into English are available by the end of this Appendix VI.

Workshop results are available in Appendix V, Photos and Translations from Latvian of the Created Materials from the Workshop. Each part is indicated separately.

Time (length in min)	Task and description	Resources
00:00	Welcome	
(5 min)	Thank you for being here. Today, you are not just users – you are co-designers. Your real classroom experience is what helps improve the digital platform. There are no right or wrong answers. We are here to learn from each other. Practicalities: 2 h (sharing the good, the bad and brainstorming for upgrades, collaborative, your experience matters the most, snacks available at any time; consent forms for Master's thesis (in Latvian) and I will record (how it all will be used).	

Time (length in min)	Task and description	Resources
00:05 **(10 min)**	Icebreaker Each participant shares: name, subject / grade level and shortly experience with the industry partner products	
00:15 **(10 min)**	Task No. 1 Please indicate how often and which the industry partner products (physical and from the digital platform) you use in the teaching process, in planning lessons, and in assessing student performance! There are 7 sheets with tables mentioning many of their products and services. Each participant have one sheet, fills it out and forwards to the next person in the circle until receiving their initial page. Everyone shares the most popular answer on their initial sheet (and comment if needed).	Felt pens Tables with the list of all products (See worksheet pages 1-7 by the end of Appendix V)
00:25 **(20 min)**	Task No. 2 Please choose the tools or products offered by the industry partner that you LIKE and FIND USEFUL, discuss them among yourselves, and fill in this table together. Working in groups of 2-3 people (3 groups). Every group shares their findings and useful products / services.	Felt pens Tables for filling in information about the good things about the industry partner products (See worksheet page 8 by the end of Appendix V)
00:55 **(5 min)**	Task No. 3 Please indicate ALL the tools, products, and features offered by the industry partner that you DISLIKE, FIND DISRUPTIVE, DO NOT WORK, are simply MISSING, ARE INSUFFICIENT, etc. Let's create a mind map together around the "stinky fish" (adapted from Hyper Island (n.d.)). Working in groups of 2-3 people (3 groups).	Felt pens Stinky fish worksheet (See worksheet worksheet page 9 by the end of Appendix V)

Time (length in min)	Task and description	Resources
01:00 **(20 min)**	Task No. 4 Please choose one tool or product offered by the industry partner that SHOULD BE IMPROVED or ADDED, discuss it among yourselves, and fill in this table together. Use ideas from the “smelly fish” worksheet. Focus on things that would be most important to solve. Each group must agree on ONE biggest pain point. If have more time, then can discuss additional pain points. Working in groups of 2-3 people (3 groups). Every group shares their ideas on how to improve the products and services provided.	Felt pens Tables for filling in information about the improvements (See worksheet worksheet page 10 by the end of Appendix V)
01:20 **(10 min)**	Task No. 5 Please write down everything that comes to mind about how the above action could be used to improve the industry partner products and services! (All ideas – even the craziest ones – are great ideas!) Words to help with brainstorming: Integrate, Automate, Remove, Transform, Add, Tidy, and Other ideas. There are 7 sheets with one word as a title. Each participant have one sheet, fills it out and forwards to the next person in the circle until receiving their initial page.	Felt pens Sheets for sharing the improvements needed (See worksheet worksheet page 11 by the end of Appendix V)
01:30 **(15 min)**	Task No. 6 Individual reflection. Complete the sentence. Please write a postcard for the industry partner by finishing the sentence: “If there was one thing that could be improved in the industry partner’soffering today, it would be...” Participants read theirs aloud (short and clear). Add information about what was useful for them today.	Felt pens Postcards with the beginning of the sentence (See worksheet worksheet page 12 by the end of Appendix V) Scissors for cutting the printed cards
01:45 **(15 min)**	Conclusion Summary of the key themes heard. Explain what will happen next with the collected input. Thank participants warmly for their honesty and ideas. Less formal conversations about the workshop.	

See all worksheets starting from the next page of this Appendix VI.

Worksheets (two pages per sheet):

***Task No. 1**: Please indicate how often and which industry partner products (physical and from the digital platform) you use in the teaching process, in planning lessons, and in assessing student performance!*

Product	I can't answer	I didn't know that such a thing existed	I knew about it, but I haven't used it	I tried it, but I don't use it on a daily basis	I use it sometimes (no more than once a month)	I use it at least once a month	I use it several times a week
Printed textbooks							
Printed workbooks							
Printed teacher's books							
(Other printed materials: specify which ones)							

1

Product	I can't answer	I didn't know that such a thing existed	I knew about it, but I haven't used it	I tried it, but I don't use it on a daily basis	I use it sometimes (no more than once a month)	I use it at least once a month	I use it several times a week
Printed reminders							
Printed posters							
Visual aids (models, etc.)							
Growth journal for students							

2

Product	I can't answer	I didn't know that such a thing existed	I knew about it, but I haven't used it	I tried it, but I don't use it on a daily basis	I use it sometimes (no more than once a month)	I use it at least once a month	I use it several times a week
Smartbooks (smart lessons)							
E-books							
Digital worksheets and writing books							
Digital geography atlas							

3

Product	I can't answer	I didn't know that such a thing existed	I knew about it, but I haven't used it	I tried it, but I don't use it on a daily basis	I use it sometimes (no more than once a month)	I use it at least once a month	I use it several times a week
Digital teacher books							
Thematic plans							
Training for teachers							
SOMA.lv support							
(Other support materials for teachers: specify which ones)							

4

Product	I can't answer	I didn't know that such a thing existed	I knew about it, but I haven't used it	I tried it, but I don't use it on a daily basis	I use it sometimes (no more than once a month)	I use it at least once a month	I use it several times a week
Digital homework assignments							
Digital assignments in class							
Interactive assignments							
Educational videos							
(Other digital materials: specify which ones)							

5

Product	I can't answer	I didn't know that such a thing existed	I knew about it, but I haven't used it	I tried it, but I don't use it on a daily basis	I use it sometimes (no more than once a month)	I use it at least once a month	I use it several times a week
Digital test papers							
Formative assessment tasks							
I create formative assignments myself							
Tracker (formative assessment tables)							
Compatibility with e-class (transfer of results)							

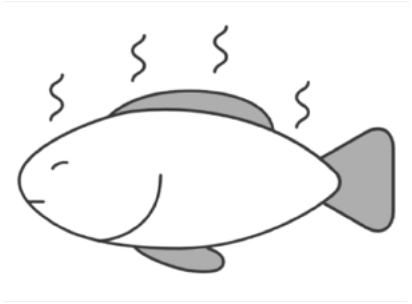
6

Product	I can't answer	I didn't know that such a thing existed	I knew about it, but I haven't used it	I tried it, but I don't use it on a daily basis	I use it sometimes (no more than once a month)	I use it at least once a month	I use it several times a week
Interactive whiteboards							
Laboratory work and experiment materials/kits							
Voting devices							
(Other virtual tools for classrooms: specify which ones)							

***Task No. 2**: Please choose the tools or products offered by the industry partner that you LIKE and FIND USEFUL, discuss them among yourselves, and fill in this table together.*

Tool/product	Why is it suitable for me/us?	What problem does it solve? / In what situations is it useful?	It would be an even better tool/product if...

***Task No. 3**: Please indicate ALL the tools, products, and features offered by the industry partner that you DISLIKE, FIND DISRUPTIVE, DO NOT WORK, are simply MISSING, ARE INSUFFICIENT, etc. Let's create a mind map together around the "stinky fish."*



9

***Task No. 4**: Please choose one tool or product offered by the industry partner that SHOULD BE IMPROVED or ADDED, discuss it among yourselves, and fill in this table together. Use ideas from the "stinky fish" worksheet. Focus on things that would be most important to solve.*

What isn't working for us? / Why is that happening?	What should be simplified? Automated? Integrated? Removed? Added?	How do we hope it will work? (Realistic/simple solution)	How would we like it to work? (Ideal solution)

10

***Task No. 5**: Please write down everything that comes to mind about how the above action could be used to improve the industry partner's products and services! (All ideas—even the craziest ones—are great ideas!)*

Integrate
Automate
Remove
Transform
Add
Tidy
Other ideas

11

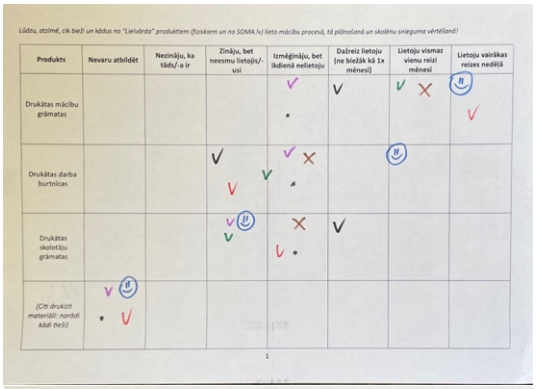
***Task No. 6**: Please write a postcard for the industry partner by finishing the sentence: "If there was one thing that could be improved in the industry partner's offering today, it would be..."*

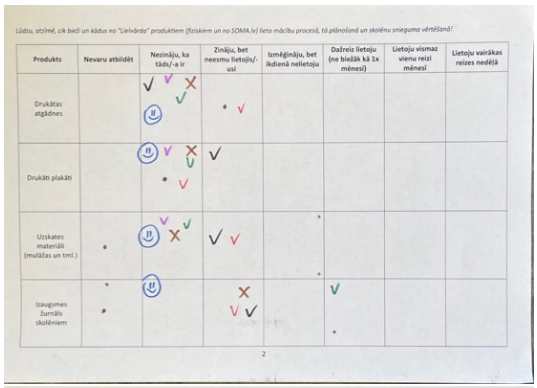
If there was one thing that could be improved in the industry partner's offering today, it would be...	*If there was one thing that could be improved in the industry partner's offering today, it would be...*
If there was one thing that could be improved in the industry partner's offering today, it would be...	*If there was one thing that could be improved in the industry partner's offering today, it would be...*

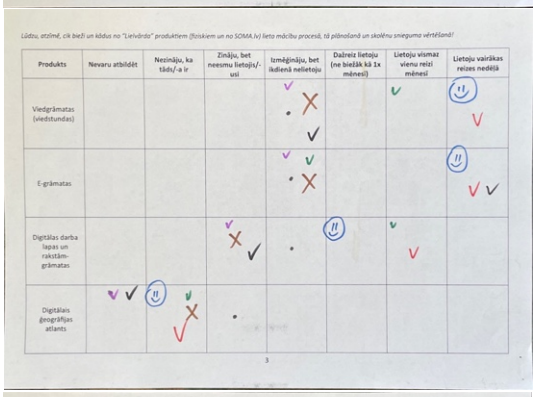
12

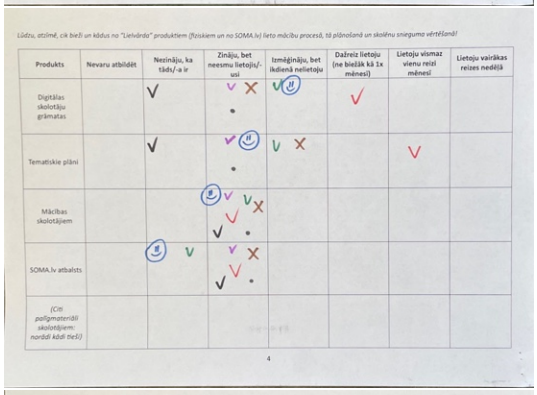
Appendix VII. Teachers' Workshop: Artefacts, Translations, and Analysis.

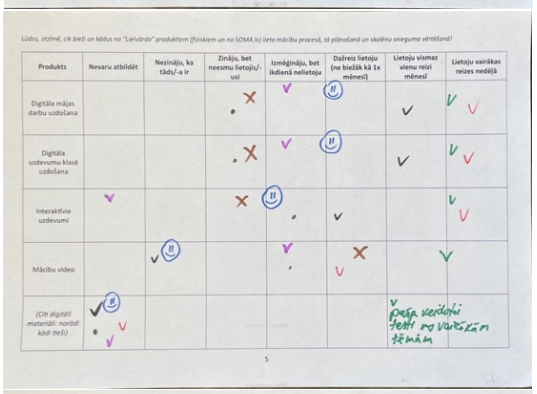
Task No. 1: Please indicate how often and which industry partner products (physical and from the digital platform) you use in the teaching process, in planning lessons, and in assessing student performance!

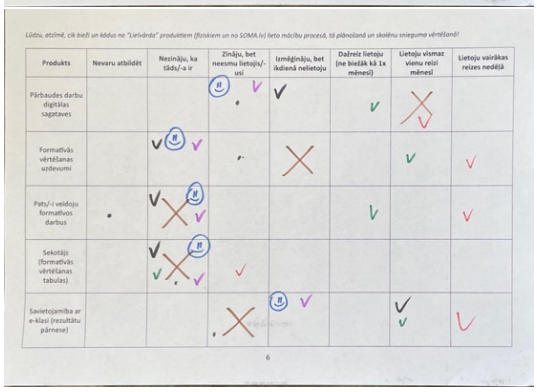


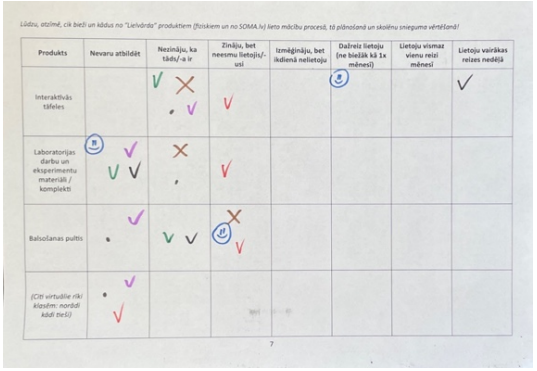








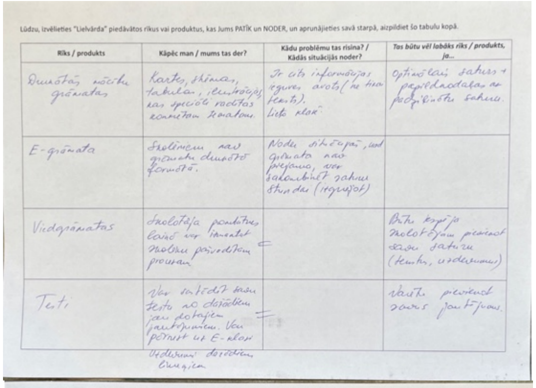




Product	I can't answer	I didn't know that such a thing existed	I knew about it, but I haven't used it	I tried it, but I don't use it on a daily basis	I use it sometimes (no more than once a month)	I use it at least once a month	I use it several times a week
Printed textbooks				2	1	2	2
Printed workbooks			2,5	2,5		1	
Printed teacher's books			3	3	1		
(Other printed materials: specify which ones)	4						
Printed reminders		5	2				
Printed posters		6	1				
Visual aids (models, etc.)	1	4	2				
Growth journal for students	2	1	3		1		
Smartbooks (smart lessons)				4		1	2
E-books				4			3
Digital worksheets and writing books			3	1	1	2	
Digital geography atlas	2	4	1				
Digital teacher books		1	3	2	1		
Thematic plans		1	3	2		1	
Training for teachers			7				
The digital platform support		2	5				
(Other support materials for teachers: specify which ones)							
Digital homework assignments			2	1	1	1	2
Digital assignments in class			2	1	1	1	2

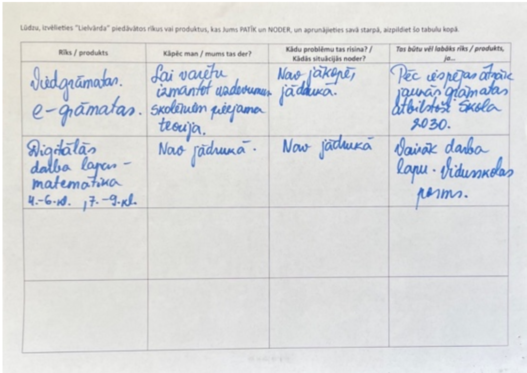
Product	I can't answer	I didn't know that such a thing existed	I knew about it, but I haven't used it	I tried it, but I don't use it on a daily basis	I use it sometimes (no more than once a month)	I use it at least once a month	I use it several times a week
Interactive assignments	1		1	2	1		2
Educational videos		2		2	2	0,5	0,5
(Other digital materials: specify which ones)	5					1 (self-made tests from several topics)	
Digital test papers			3	1	1	2	
Formative assessment tasks		3	1	1		1	1
I create formative assignments myself	1	4			1		1
Tracker (formative assessment tables)		6	1				
Compatibility with e-class (transfer of results)			2	2		2	1
Interactive whiteboards		4	1		1		1
Laboratory work and experiment materials/kits	4	2	1				
Voting devices	2	2	3				
(Other virtual tools for classrooms: specify which ones)	3						

Task No. 2: Please choose the tools or products offered by the industry partner that you LIKE and FIND USEFUL, discuss them among yourselves, and fill in this table together.



Lūdzu, izvēlieties "Lielvārda" piedāvātos rīkus vai produktus, kas Jums PATĪK un NODER, un aprunājieties savā starpā, aizpildiet šo tabulu kopā.

Rīks / produkts	Kāpēc man / mums tas der?	Kādu problēmu tas risina? / Kādās situācijās noder?	Tas būtu vēl labāks rīks / produkts, ja...
Drukātās mācību grāmatas	Kartes, shēmas, tabulas, ilustrācijas, kas speciāli radītas konkrētam tematam.	Ir cits informācijas ieguves avots (ne tikai teksts). Lieto klasē	Optimālais saturs + papildnodaļas ar padziļinātu saturu.
E-grāmata	Skolēniem nav grāmatu drukātā formātā.	Noder situācijā, kad grāmata nav pieejama, var sakombinēt saturu stundai (izgriežot)	
Vindgrāmatas	Skolotāja produktīvs laiks var izmantot skolēnu pārvaldības procesam	=	Būtu kopīgs skolotājiem pievienot savu saturu (tekstus, uzdevumus)
Testi	Var sastādīt savu testu no dažādiem jau dotajiem jautājumiem. Var pārnest uz E-klasi. Uzdevumi dažādiem līmeņiem	=	Varētu pievienot savus jautājumus.



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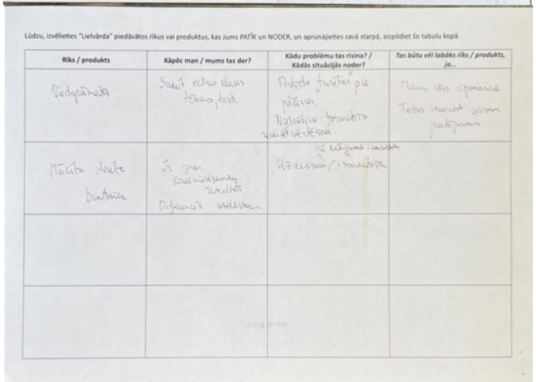
Rīks / produkts	Kāpēc man / mums tas der?	Kādu problēmu tas risina? / Kādās situācijās noder?	Tas būtu vēl labāks rīks / produkts, ja...
Viedgrāmatas. e-grāmatas.	Lai varētu izmantot uzdevumus. Skolēniem pieejama teorija.	Nav jākopē, jādrukā.	Pēc iespējas ātrāk jaunās grāmatas atbilstoši Skola 2030.
Digitālās darba lapas – matemātika 4.-6. kl., 7.-9. kl.	Nav jādrukā.	Nav jādrukā	Vairāk darba lapu. Vidusskolas posms.

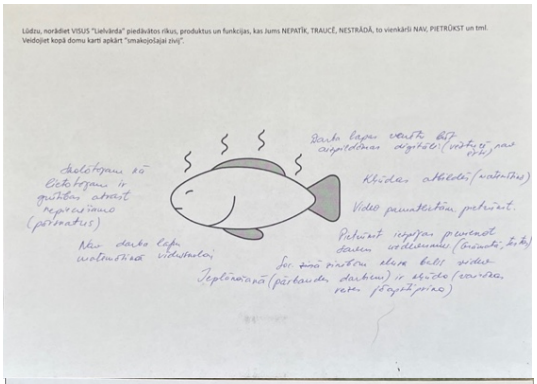


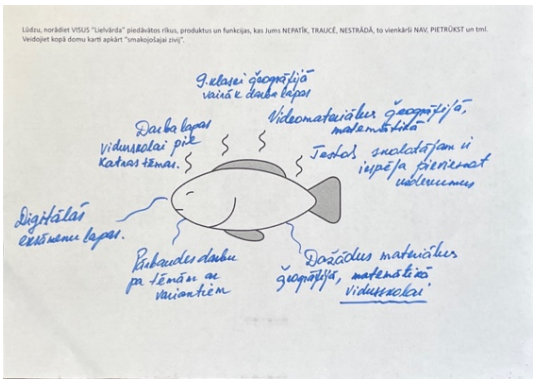
Lūdzu, izvēlieties "Lielvārda" piedāvātos rīkus vai produktus, kas Jums PATĪK un NODER, un aprunājieties savā starpā, aizpildiet šo tabulu kopā.

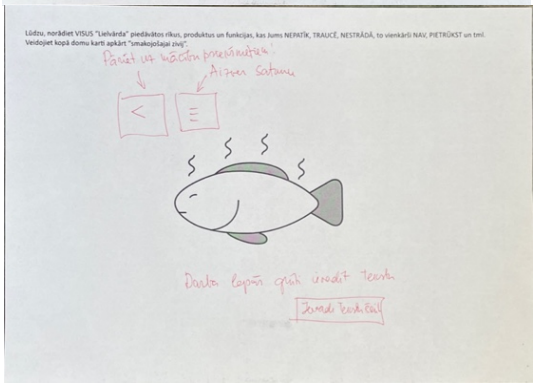
Rīks / produkts	Kāpēc man / mums tas der?	Kādu problēmu tas risina? / Kādās situācijās noder?	Tas būtu vēl labāks rīks / produkts, ja...
Viedgrāmata	Saturā katras klases tēmas, testi	Palīdz "turēties pie plāna". Nodrošina formatīvo zaļiet vērtēšanu	Mani viss apmierina. Testus izveidot savus jautājumus
Mācību darba burtnīca	Ir gan sasniedzamais rezultāts. Diferencēti uzdevumi	Kā mājasdarbu izmanto. Uzdevumi, izmantotu	

Tool/product	Why is it suitable for me/us?	What problem does it solve? / In what situations is it useful?	It would be an even better tool/product if...
Team A			
Printed textbooks.	Maps, diagrams, tables, and illustrations created specifically for a particular topic.	They serve as an alternative source of information (not just text). Used in the classroom.	Optimal content + supplementary chapters with in-depth material.
E-book	Students do not have the book in print.	It is useful in situations where the book is not available; you can compile the content for the lesson (by cutting and pasting).	
Smartbooks	These can be used for student-led learning when the teacher is absent.	These can be used for student-led learning when the teacher is absent.	Teachers should be able to add their own content (texts, assignments).
Tests	You can create your own test using a variety of pre-existing questions. You can upload it to e-class. There are exercises for different levels.	You can create your own test using a variety of pre-existing questions. You can upload it to e-class. There are exercises for different levels.	You could add your own questions.
Team B			
Smartbooks	To be able to use the exercises. The theory is available to students.	No need to copy or print.	New books aligned with Skola 2030 as soon as possible.
Digital worksheets – math for grades 4–6, grades 7–9	No need to print.	No need to print.	More worksheets. Secondary school level.
Team C			
Smartbooks	The topics and tests for each class align.	It helps me “stick” to the plan. It ensures the implementation of formative assessment.	I’m satisfied with everything. I can include my own questions in the tests.
Workbook	It includes learning objectives. Differentiated tasks.	Use of the workbook as a collection of tasks.	

Task No. 3: Please indicate ALL the tools, products, and features offered by the industry partner that you DISLIKE, FIND DISRUPTIVE, DO NOT WORK, are simply MISSING, ARE INSUFFICIENT, etc. Let's create a mind map together around the "stinky fish."

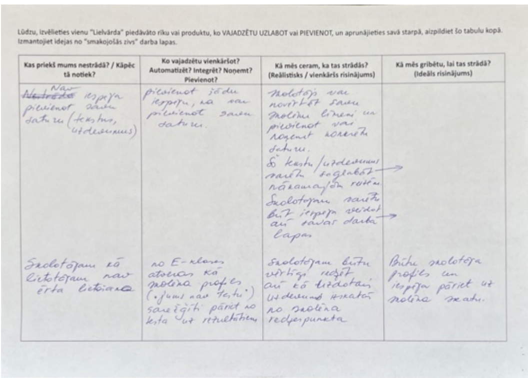


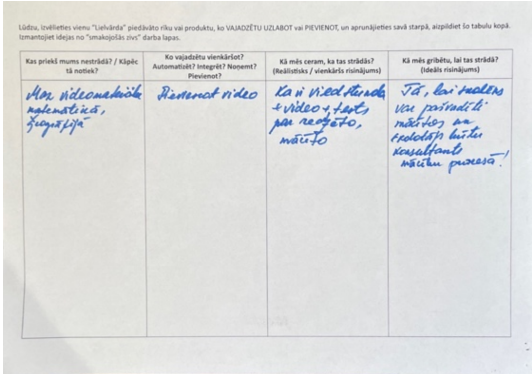


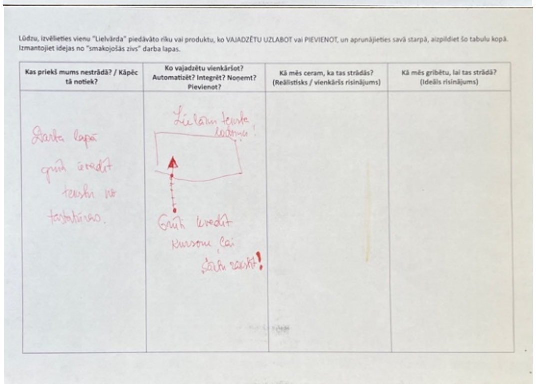


Team A	Team B*	Team C
Teachers, as users, have difficulty finding what they need (reports).	More worksheets for 9th-grade geography.	< Go to the subject ≡ Close / hide the content
There are no worksheets for high school math.	Worksheets for high school on each topic.	It's difficult to enter text in the worksheets [enter text here].
Worksheets could be filled out digitally (this is not convenient for history).	Digital exam sheets.	
Errors in the answers (in math).	Themed tests with multiple-choice questions.	
There is a lack of videos on basic topics.	Various materials for high school geography and math.	
There is no option to add your own assignments (in the textbook, tests).	Teachers can add questions to the tests.	
Social studies silent voice video	Video materials for geography and math.	
There is an error in scheduling (for tests) (requires confirmation multiple times).	** Answered the question by stating things that they would like to have (from a perspective that this is missing).*	

Task No. 4: Please choose one tool or product offered by the industry partner that SHOULD BE IMPROVED or ADDED, discuss it among yourselves, and fill in this table together. Use ideas from the "stinky fish" worksheet. Focus on things that would be most important to solve.



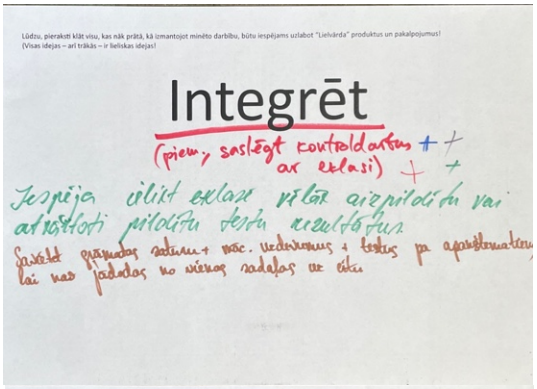


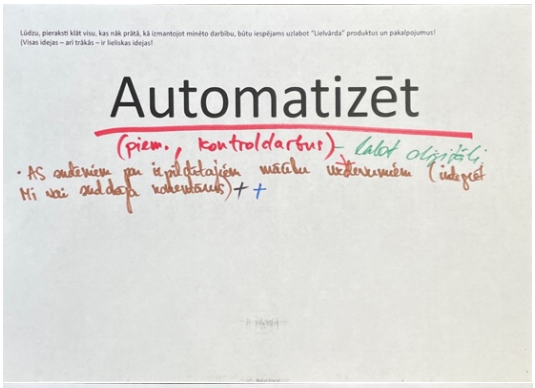


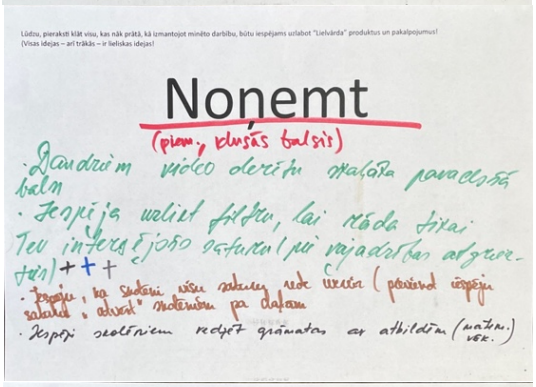
What isn't working for us? / Why is that happening?	What should be simplified? Automated? Integrated? Removed? Added?	How do we hope it will work? (Realistic/simple solution)	How would we like it to work? (Ideal solution)
Team A			
There is no option to add your own content (texts, assignments).	Please add the option to upload your own content.	Teachers should be able to assess their students' skill levels and add or remove specific content.	These texts/assignments could be saved for future use. Teachers should also have the option to create their own worksheets.
The platform is not user-friendly for teachers.	When opening from e-Class, it opens as the student's profile ("you have no tests"), and it is difficult to switch from the test to the results.	It would be helpful for the teacher to also see how the assignment looks from the student's perspective.	There should be a teacher's profile and the option to switch to the student's view.
Team B			
There is little video content in math and geography.	Add a video.	It should be a smart lesson + video + a quiz on what was seen and taught.	This way, students can learn independently, and the teacher acts as a consultant in the learning process!
Team C			
It's hard to type the test into the worksheet using the keyboard.	Make the text box bigger! It's hard to position the cursor to start typing!		

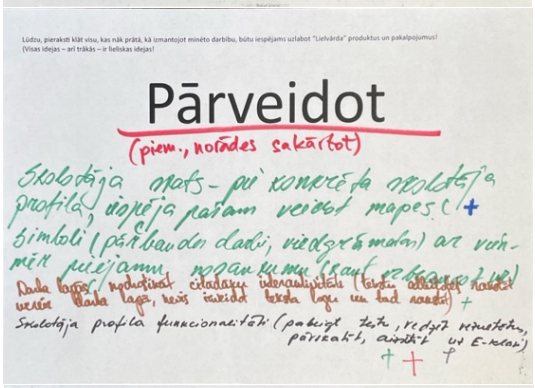
Task No. 5: Please write down everything that comes to mind about how the above action could be used to improve the industry partner's products and services! (All ideas – even the craziest ones – are great ideas!)

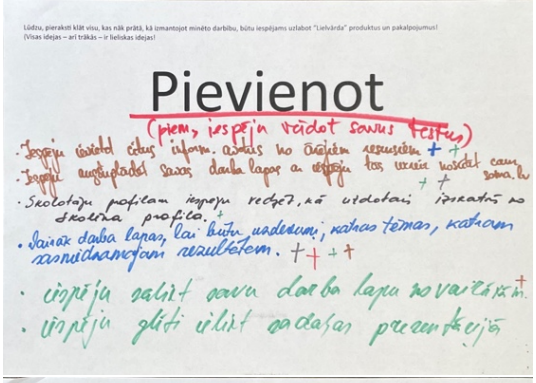
* During the workshop, teachers agreed to add "+" to the ideas someone else had written down, and they would like to see it implemented.

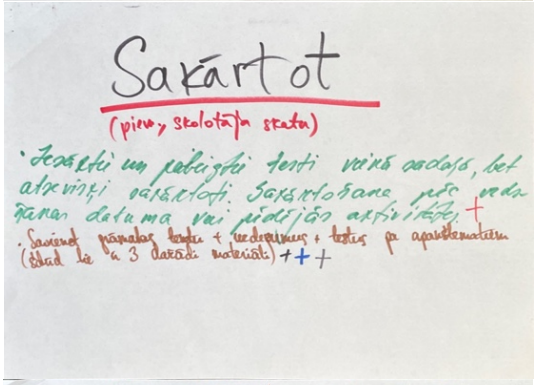


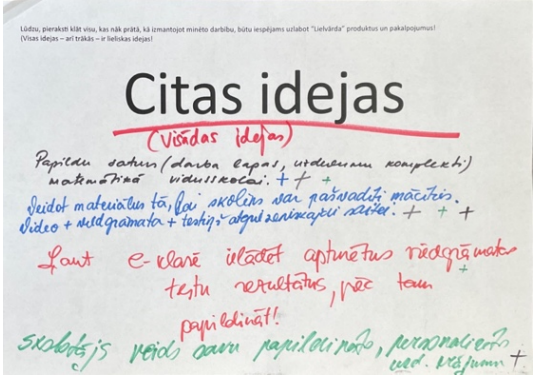


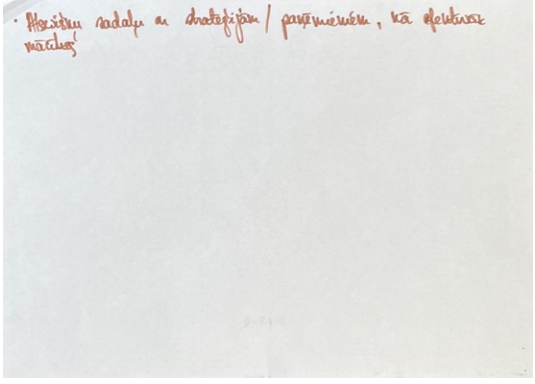








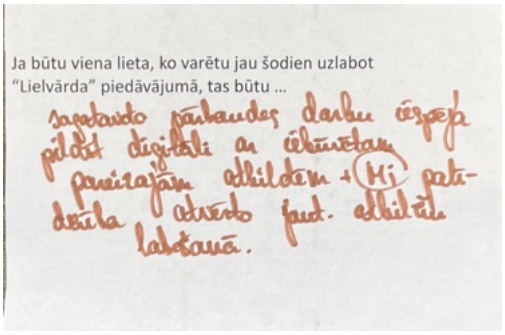


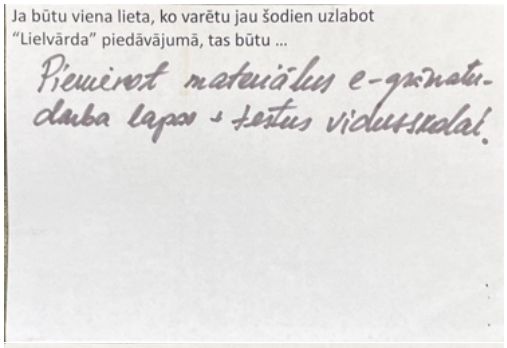


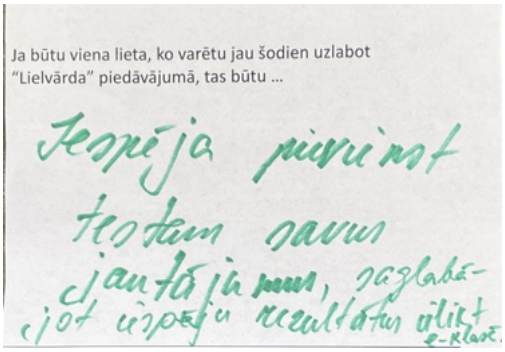
Main word / activity	Ideas (additional support indicated by "+")
Integrate	• (e.g., connect final tests with SIS) ++++ • The ability to upload test results that were completed later or retaken to the e-classroom. • Combine the book's content, learning activities, and tests by subtopics so that users don't have to switch between sections.
Automate	• (e.g., final tests) + • Final tests to be assessed digitally. • Feedback to students on completed assignments (incorporate AI or teacher comments). ++
Remove	• (e.g., silent voices in the videos) • Many videos would benefit from a louder narration. • The ability to apply a filter to show only the content you're interested in (with the option to go back if needed). +++ • The ability for students to view all content at once (add the option to "unlock" content for students in parts). • The ability for students to view answer keys (for high school math).
Transform	• (e.g., organize links) • Teacher view – on a specific teacher's profile, the option to create folders yourself. + • Icons (tests, smartbooks) with a permanently visible label (even when hovering over them). • Provide a different kind of interactivity on worksheets (allow students to type text answers directly on the worksheets instead of opening a text box and then typing). + • Teacher profile functionality (complete a test, view results, review, send to e-class). +++
Add	• (e.g., the ability to create your own tests) • The ability to embed other informational sources from external resources. ++ • The ability to upload your own worksheets with the option to send them immediately via the digital platform. ++ • For the teacher's profile, the ability to see how the assignment appears from the student's profile. • More worksheets to include assignments for each topic and each learning outcome. ++++ • The ability to combine multiple worksheets into one. + • The ability to neatly organize sections within a presentation.

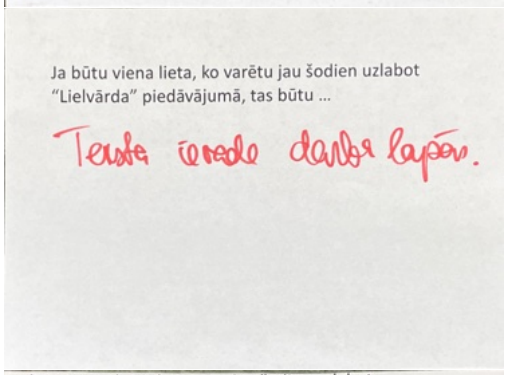
Main word / activity	Ideas (additional support indicated by "+")
Tidy	• (e.g., teacher's view) • Started and completed tests in a single section, but organized separately. Sorting by assignment date or last activity. + • Combine the textbook text + exercises + tests by subtopics (currently, these are three separate sets of materials). +++
Other ideas	• (all kinds of ideas) • Supplementary content (worksheets, exercise sets) for high school math. +++ • Create materials so that students can learn independently. Video + smartbook + short quiz for feedback. +++ • Allow e-class to upload paused smartbook test results, then supplement them! + • Teachers create their own supplemented, personalized collection of assignments. + • A separate section with strategies/techniques for learning more effectively.

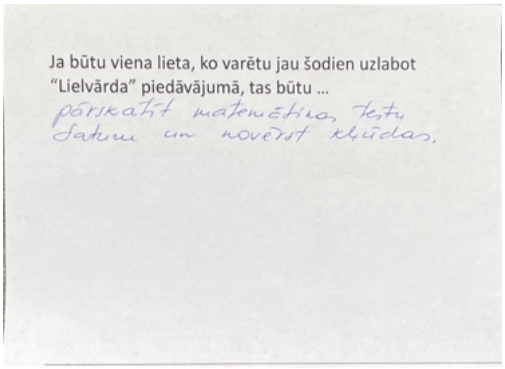
Task No. 6: Please write a postcard for the industry partner by finishing the sentence: "If there was one thing that could be improved in the industry partner's offering today, it would be..."

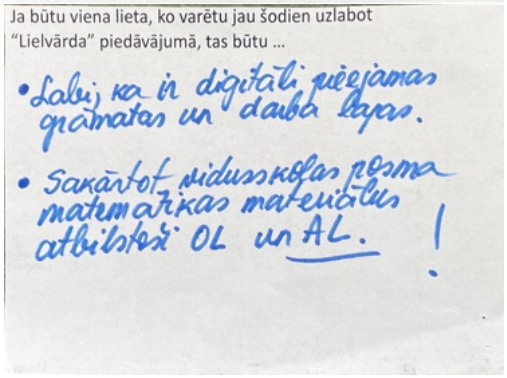












If there was one thing that could be improved in the industry partner's offering today, it would be...
The option to complete prepared tests digitally with built-in correct answers + AI assistance in grading open-ended questions.
Add materials: e-book worksheets + tests for upper secondary school.
The option to add your own questions to the test, while still being able to upload the results to SIS.
Text entry in worksheets.
Review the content of the math test and correct any errors.
It's great that books and worksheets are available in digital format. / Organize high school mathematics materials according to the optimal level and the advanced level.
Show only the Latvian language topics if I register as a Latvian language teacher.(Not written but said verbally by one participant; transcribed from the audio recording of the workshop)

Additional notes from the workshop recording: complaints, compliments, ideas, etc., that are not written in the worksheets but were mentioned in the conversations.

- Intro and Icebreaker. Each participant shares: name, subject / grade level and a short experience with the industry partner products.

I'm a 7th-grade student in a Latvian language class; I didn't see the older ones, but the 7th-grade material is there, so I use that.

History and social studies – it depends on when I start looking: at first, I search everywhere, and once I find it, I stop looking; maybe there's something new there now that I don't know about. I like the tests, but I don't like that I can't create my own tests. I use worksheets. I'd like to hear about others' experiences.

Co-author. I don't use 1:1 because not everything fits my own teaching style. I create the tests myself, but sometimes I look at the questions. I adapt the existing ones to my needs.

Math, previously only taught lessons, but now also tests; however, last year it didn't go well with the students – they did little and complained. It's convenient to be able to display assignments and such on the screen.

Math, for the little ones, worksheets, and more problems on the screen for grades 7–9. E-books. Lacks videos and topic-based content. Seeing and hearing things is important for kids.

Geography, beginner level, I use worksheets. More videos and worksheets needed. For some topics, there's nothing. Use old worksheets instead.

Physics, lots of changes, the digital platform is like a lifesaver, mainly uses 1:1, worksheets; when the school didn't pay, I bought this service myself. Book on the phone. If classes are cancelled or I'm not prepared, I send them to the students. I mix up the questions on tests so there's no use of MI. The buttons are confusing; I should have signed up. I've sent a lot of errors, including historical ones.

- Task No. 2. Please choose the tools or products offered by the industry partner that you LIKE and FIND USEFUL, discuss them among yourselves, and fill in this table together.

Supplementary content is separated, or there are notes indicating that this is essential knowledge for everyone, while the other part is supplementary.

When an e-book is displayed on the board, students no longer constantly ask which page to look at.

A single chapter in a hardcover math book is expensive. But e-books solve that. Students don't have to carry them, and even if they forget the book at school or at home, there's a place to look it up.

You can copy text – if there are 1–2 paragraphs, you can use them right away.

Books are published very slowly; I'd like them to come out faster, otherwise we have to use the old ones.

Some schools have students keep books at home but use e-books in class, while others do the opposite: books are kept in class to avoid using devices, but e-books are at home.

There is a severe shortage of materials for the secondary school level.

Worksheets have a lot of blank space: author information at the top and bottom, and when there isn't much paper, you end up printing with a lot of white space, but then you have to copy and rearrange everything – that takes time. It would be great if I could put together a worksheet myself using only the tasks that seem appropriate for the specific class, while also leaving minimal white space.

Formative test results are high, but as soon as they have to write, the results are much lower because students don't know how to formulate their thoughts. And various computer-based tools are used in the tests. (There is discussion about whether Chromebooks can be set to prevent opening other tabs and the like while working, but not everyone knows how to do this, and Chromebooks aren't always available.)

Randomise the order, randomise the correct answers. It is also necessary to explain to students that these tests are 100% useless; without knowledge, they won't get anywhere anyway.

- Task No. 4. Please choose one tool or product offered by the industry partner that SHOULD BE IMPROVED or ADDED, discuss it among yourselves, and fill in this table together. Use ideas from the "smelly fish" worksheet. Each group must agree on ONE biggest pain point. If they have more time, then they can discuss additional pain points. Every group shares their ideas on how to improve the products and services provided.

We're talking about visuals that aren't always easy to understand. We need to mention the symbols, because if they aren't used often, people forget what they mean.

Each child's page is separate; there's no overview like there is with digital workbooks

It often happens that you assign work and then everyone logs in slowly – while they're logging in, it's slow and stressful.

Be able to differentiate.

Start with this, do that – if they get stuck, there should be automatic hints.

Until you click "Finish," you can't submit the results. Once you submit, you can't add to it. Upload in whole percentages

Students tend to get confused when they log in – where's the test? If it's through SIS, then yes, but if not through SIS, then it doesn't sync – you can't see the results.

- Reflection. What was useful for the participants today.

Checked the tools.

Schedule a test for a specific time – give it a try. (It's not immediately visible…)

If final tests are digital, then the teacher has less cognitive effort in grading assignments. Eduspace was good. So I don't have to grade the test myself; for example, there are usually 2 assignments like that. I liked the process.

High school math – not by grade level, but by proficiency level, since it's taught in different classes. The conclusion is that I don't know much about the platform.

Digital atlas – I'll take a look.

I noticed that the final topic tests are separate.

I made a list of things to look into (shows a list).

- Informal chat after the workshop on the same topic.

Topic: learning outcomes listed, smartbook, video, feedback linked with assignments – all together, that would be the ideal solution. Plus, differentiation.

There's no point in creating any materials for the teachers, because they pay ridiculously little for creating them (at least on another platform).

It takes so much time to prepare for homeroom class lessons.

Summary of the Teachers' Ideas on Upgrading the Industry Partner's Products:

Theme	Ideas for improvement.
Content Gaps	There is little video content in math and geography.
	Many videos would benefit from a louder narration
	More worksheets to include assignments for each topic and each learning outcome (5)
	Supplementary content (worksheets, exercise sets) for high school, e.g., math (5)
	Review the content of the math test and correct any errors.
	Start with this, do that – if they get stuck, there should be automatic hints (self-help before the teacher).
Individualisation and Differenciation (Both for students and teachers)	The ability for students to view all content at once (add the option to "unlock" content for students in parts).
	The ability to embed other informational sources from external resources (3)
	Be able to differentiate.
	Adding own content to existing: tests, smartbooks, and worksheets. (2)
	The ability to combine multiple worksheets into one (2)
	Teachers create their own supplemented, personalized collection of assignments (2)
	The ability to upload your own worksheets with the option to send them immediately via the digital platform. (3)

Theme	Ideas for improvement.
Usability of existing tools	"Type text here" function is confusing for the students when adding information as well as for the teachers when seeing millions of "Type text here" saved with the needed information somewhere under a pile of those. Text entry in worksheets. Provide a different kind of interactivity on worksheets (allow students to type text answers directly on the worksheets instead of opening a text box and then typing). (3) The ability for students to view answer keys tehmselves (for secondary school math). Icons (tests, smartbooks) with a permanently visible label (even when hovering over them). We're talking about visuals that aren't always easy to understand. We need to mention the symbols, because if they aren't used often, people forget what they mean. (2) For the teacher's profile, the ability to see how the assignment appears from the student's profile. (3) Each child's page is separate; there's no overview like there is with digital workbooks.
Communication between platforms (the industry partner's digital platform and SIS)	The option to add your own questions to the test, while still being able to upload the results to SIS Connect final tests with SIS (4) The ability to upload test results that were completed later or retaken to the e-classroom When opening the link to the task from SIS, the content shows as if you were a student – that is confusing. Allow e-class to upload paused smartbook test results, then supplement them! (2) Until you click "Finish," you can't submit the results. Once you submit, you can't add to it. Upload in whole percentages

Theme	Ideas for improvement.
Organisation of information	Combine the book's content, learning activities, and tests by subtopics so that users don't have to switch between sections.
	The ability to apply a filter to show only the content you're interested in (with the option to go back if needed). (4)
	Teacher view – on a specific teacher's profile, the option to create folders yourself (2)
	Hard to find where some things are located (for example, scheduling the test)
	Started and completed tests in a single section, but organized separately. Sorting by assignment date or last activity. (2)
	Combine the textbook text + exercises + tests by subtopics (currently, these are three separate sets of materials) (4)
	Create materials so that students can learn independently. Video + smartbook + short quiz for feedback (4)
	Organize high school mathematics materials according to the optimal level and the advanced level
	Show only the Latvian language topics if I register as a Latvian language teacher
	The ability to neatly organize sections within a presentation.
	Teacher profile functionality (complete a test, view results, review, send to e-class) (4)
	High school math – not by grade level, but by proficiency level, since it's taught in different classes.
Grading (and Automatisation)	Automatic final tests.
	Final tests to be assessed digitally
	Feedback to students on completed assignments (incorporate AI or teacher comments). (3)
	The option to complete prepared tests digitally with built-in correct answers + AI assistance in grading open-ended questions.

Theme	Ideas for improvement.
Other	It often happens that you assign work and then everyone logs in slowly – while they're logging in, it's slow and stressful.
	Students tend to get confused when they log in – where's the test? If it's through SIS, then yes, but if not through SIS, then it doesn't sync – you can't see the results.
	Topic: learning outcomes listed, smartbook, video, feedback linked with assignments – all together, that would be the ideal solution. Plus, differentiation.
	There's no point in creating any materials for the teachers, because they pay ridiculously little for creating them (at least on uzdevumi.lv).
	It takes so much time to prepare for homeroom class lessons.
	If final tests are digital, then the teacher has less cognitive effort in grading assignments. Eduspace was good. So I don't have to grade the test myself; for example, there are usually 2 assignments like that.
	A separate section with strategies/techniques for learning more effectively

The number in the brackets shows how many times the topic was mentioned or written during the last part of the workshop (Tasks No. 3-7). If there is no number, it's mentioned one time only. Similar ideas have been grouped and reframed as one idea.

Appendix VIII. Evaluation of the Ideas Meeting with the Industry Partner: Notes.

March, 2026

Plan of the 60 min meeting

1) Explain how it went with the teachers during the workshop: what they like about the IP products and what their knowledge is about the products and services;
2) Review the suggested 35 updates and ask the Project Director to evaluate these in three aspects (impact on usability, difficulty of implementation, and time needed for implementation);
3) Share the complaints without any solutions coming out of the workshop;
4) Ask if there is anything he would like to ask the experts during the planned interviews;
5) Explain the next steps until submitting the thesis.

Notes and results

1) After showing what the teachers knew and explaining what they liked from teaching ecosystem products, the Project Director responded that he was not in fact surprised, as the things from the graph starting from digital down – top 3 things – are exactly those that are in focus for the company to promote at the moment. He was surprised that teachers knew about the Growth journal for the students. Also, after hearing that teachers have two strategies about where kids use printed books and where the e-books, he mentioned that they are selling the idea that printed books are available at school, and e-books are for use at home.
2) The Project Director reviewed the 35 suggested ideas numbered in a random order, see the table below. After being asked how he would cluster these ideas based on IP needs and viewpoints, he replied that all these could be divided by the time needed to implement and do additional research, as 7 teachers are a good pool of insights, but for strategic decisions, more voices should be heard. There could be four groups. First one, containing things that are easy to change, like small mistakes and small nuances that could take up to 3 months. Second, the ideas that might need wider research. The third group involves ideas that ask for changing the strategy conceptually. Fourth group – ideas that are not new to the IP and have been part of

the plans already, working on them, for example, creating materials for upper secondary level, as for some subjects it takes at least a year to create the whole package, and the authors are full-time employed at the IP.

3) After listening to the complaints without the solutions, the only reaction came from a comment that "it is a challenge to get ready for the class lessons". The Project Director suggested Growth journal to be used at these lessons.
4) The Project Director suggested that the experts ask about how they evaluate what good materials are, how they set standards, especially if they allow people to add their own parts to the existing courses before publishing anything. Also, he would be interested in how much time it takes to create a new course. For school-level platforms, how much time does it take to create a subject for one grade, one academic year?
5) Agreed on another meeting after interviewing the experts, asking the teachers about the impact of the condensed ideas, and getting in touch when needed to answer some small additional questions and clarifications before submitting the final document for review.

Evaluation of the suggested solutions

- Impact on usability, 1-5, where 1 means minimal and 5 very impactful.
- Difficulty of implementation, 1-5, where 1 means easy and 5 very hard.
- Time needed for implementation, 1-5, where 1 means a few days and 5 means at least a year.

IDEA	Impact	Difficulty	Time
1. Add more video content.	4	4	5
2. Make louder narration for videos.	4	1	1
3. More worksheets and include assignments for each topic and each learning outcome; secondary school level especially needed.	4	4	5
4. Create materials so that students can learn independently. Video + smartbook + short quiz for feedback	4	2	5

IDEA		Impact	Difficulty	Time
5.	For worksheets, make customisable layout with minimal white space (essential for printing).	2	3	3
6.	Make books and supplementary content (worksheets, exercise sets) for high school.	5	3	5
7.	Review the content of the math tests and correct any errors.	5	1	1
8.	“Start with this, do that” – if students get stuck, there should be automatic hints (self-help and guidance before the teacher).	1	4	5
9.	Add the option to “unlock” content for students in parts.	4	1	2
10.	The ability to embed other informational sources from external resources in smartbooks, tests and worksheets. The ability to combine multiple worksheets into one. Building blocks of information in the platform + self-created blocks.	4	4	5
11.	Add option to randomise order of test questions and aswers for each student in tests (and worksheets).	4	3	3
12.	Being able to differentiate – different sets of various tests or levels for the students (individually tailored).	4	4	4
13.	Indicate the essential vs. supplementary content in books and e-books (optimal content + supplementary chapters).	4	1	1
14.	Improve text entry in worksheets. “Type text here” function is confusing for the students when adding information as well as for the teachers when seeing millions of “Type text here” saved with the needed information somewhere under a pile of those.	4	2	3
15.	Create digital workbook overview: see kids work overview; each page is separate at the moment.	2	4	3

IDEA	Impact	Difficulty	Time
16. Equip icons (tests, smartbooks) with a permanently visible label (maybe when hovering over them).	3	1	1
17. Add option, for the teacher's profile, the ability to see how the assignment appears from the student's profile.	3	4	4
18. Automate checking and grading final tests, connect with SIS. At least the ABC tests (next level: add AI that helps with grading open-ended questions).	4	3	4
19. Add feedback option to give students on completed assignments (might incorporate AI or just teacher comments).	5	2	2
20. Add the ability to upload additional test results that were completed later or retaken to the SIS (until you click "Finish," you can't submit the results; once you submit, you can't add to it).	3	3	3
21. Create an option to see students working in real time – see who is stuck, who has completed everything etc.(real-time tracker).	We already have this	We already have this	We already have this
22. Make the system that if I am teacher, I always see everything as teacher when opening links (when opening the link to the task from SIS, the content shows as if you were a student – that is confusing).	3	1	1
23. Make %% for tests without decimals – in full numbers.	4	1	1
24. Combine the book's content, learning activities, and tests by subtopics so that users don't have to switch between sections (currently, these are three separate sets of materials). Topic: learning outcomes listed, smartbook, video, feedback linked with assignments – all together, that would be the ideal solution.	4	3	4
25. Organize high school materials according to the optimal level and the advanced level.	4	4	5

IDEA	Impact	Difficulty	Time
26. Add the ability to apply a filter to show only the content you're interested in every time you log in (show only the Latvian language topics grade 7 if I register as a Latvian language grade 7 teacher).	5	3	3
27. Add the ability to organize information within a presentation from the existing content, with ability to add own slides.	4	4	3
28. Update student view: as soon as they get a new test or task they see it on their profile, no need to go through SIS.	4	2	3
29. Eliminate cheduling errors for tests (requires multiple confirmations).	4	1	1
30. Upgrade accessability of the platform for students and teachers: option to change bigger-smaller letters, contrast, text-to-speech etc.	5	3	5
31. Create a separate section with strategies/techniques for students to learn to study more effectively.	3	3	3
32. Rebrand and remake the platform as a tool for lesson creation and storage for any subject on the top of being a digital library of teaching materials. Create an option for teachers to create their own supplemented, personalized collection of assignments and lessons.	3	4	5
33. Add a timeline somewhere for every class: year overview + where are we at the moment (and the content getting suggested as the topic goes).	5	4	3
34. Add possibility to sort assignements by assignment date or last activity (now, Started and completed tests in a single section, but organized separately).	3	3	3
35. Create a virtual tutor / assistant for each student with the help of AI (reminds, explains, suggests strategies, is safe, etc.).	3	4	5

Appendix IX. Semi-structured Interviews with the Experts: Transcripts.

April, 2026

Interview questions

Short information about the platform of the industry partner and what I have done in the study so far.

Please shortly describe the platform you are working with (target audience, main features, and scope) and your responsibilities there.

When thinking about digital solutions and accessibility, what are the key features the platform should have and why? What special features for both teachers and students do you have integrated or plan to integrate for those people with special usability needs?

When thinking about individualisation/differentiation, for students, what is your experience? Which tools best support differentiated learning (e.g., tailored tests, self-paced content, accessibility options)?

What AI solutions have you incorporated into the platform? Why, what challenges do they address? Are these for educators or students, or both?

How do you decide on any upgrades in the platform? How do you identify that something is not working? What is the process inside the organisation? How do you decide what to implement and what not to? (Any piloting, and how is it done?) How do you currently measure the success of new features? (e.g., usage analytics, teacher/student feedback, test scores)

How do you think what is *hot* right now in the field of education, digital platforms or tools?

Additionally, only for the school education platform expert:

How much time does it take to create materials for one grade in one subject?

How important is it for students to have self-help tools (e.g., automatic hints, virtual tutor) vs. teacher-led guidance?

Interview with RG, anonimised transcript

RG: No, I think it's all clear. Thank you for giving the context, and very, very glad to help, and let me see how far I can answer, and how much I can answer.

RG: Sure, so, our company is, one of the, I would say, the biggest, ed tech company around in the United States, of America, especially. I don't know the exact percentage, but they are in more than 90% of the US schools. And they have a very strong curriculum connection. Earlier, it was a publishing company, and then they went to digital, and now they are a platform company. And, they have an international presence as well, but I don't work in that space, so I don't know.

RG: looks like. But as part of, our company, our company actually acquired an assess… so, our company was a curriculum-based company, and then they acquired another company, which was an assessment organization that did for k-12, and these were, formative assessment, so it happened, three times a year, and based on that assessment data, teachers could take curriculum decisions and, you know, what content should be, What content should be taught to, taught to kids, and so on and so forth. so, our company acquired another company around 3 years back. and, that's when… because they wanted to become a powerhouse and not just being a curriculum provider, but tying assessment and curriculum together, because it is… it is critical, I mean, think of it from a teacher's perspective, that I, as a teacher, is administering a test. My students, you know, get certain scores depending on what my scoring criteria is. I would also want to know how can I scaffold their learning further. So some students may do amazing, and they would excel in that test, while others would need a lot of scaffolding. So what kind of curriculum I should be using, what kind of content I should be showing these students. So, So, in summary, that was really the intent of, you know, marrying, like, curriculum and assessment, and that was the intent of the acquisition, in general. In terms of my work at our company, so I work as a senior UX, design manager at our company. and my, I work on the platform that serves the content to teachers and admins and students. We primarily work across I would say 4 major personas now. So the first one is administrators. I'm not sure how much you're familiar with the, with the, the educational landscape in the United States, but there is something called administrators, that, so, so the hierarchy is… District, within a district, there are a number of schools, and then within a school, you would have, grades. Within a grade, you would have classes, and within the classes, you have students or users, right? So, so we have 4 major personas, which is

administrators, Who operate both at the district context and at the school context. And then we have, teachers who work in the school context. They might be… they might work across schools also in some circumstances, and that is, not a very un… that is not a very uncommon scenario. And then we have the, class context. So… So we have the dis… so we have the administrators, we have the teachers, then we have the students. So the class context is where the students come in, right? So, students associated with the class. And then we have, a new role that we have, actually, a new persona that we have rolled out, last year. But, so the fourth persona that we actually introduced last year was parents. So providing parents an ability to view curriculum, like what is being taught in schools, and, you know, they can access curriculum, they can know what is what kind of content students are being exposed to. So those are the four types of personas that we have. My work is, mainly con- while I look at, like, my teams serve all these personas. My work from a design perspective is mainly focused on the administrative personas. So, anything that the admins do in the system is something that I, I look, look into. And that's the snapshot of what I do.

RG: Yeah, that, so we have, we don't have tools, we have products that are used, for scaffolding, at our company. there are, so there are… there is something called core curriculum. and then there is something called, what's the word? i'm missing the name, oh, god. i'm just missing the name. but, so there is the core curriculum, and then there is intervention. so there are intervention programs, and then there are other product bundles, which kind of, sell, the core curriculum and the, you know, and the intervention programs together, but they're bundled up separately. so, for example, my core curriculum of our company could be something like English language, right? I'm not naming the curriculum, but I'm just giving you a general example. And then based on the… on the assessment and, you know, how the class is performing, or how the grade level is performing, teachers or district might decide that, okay, if you want to scaffold any kind of learning, then you need to use these intervention programs. So, you know, Into Reading, which is a core curriculum, could be supported by an intervention program called Read180. So, so then these two marry. So, teachers do the core instruction, and then they support, this, the curriculum with these intervention programs. Now, intervention programs can be distributed, to all kids, or to some kids, depending on, you know, how they want to do it.

RG: I wouldn't say teacher in this context, it's usually the district decision, to whether to purchase or not to purchase these products.

RG: We have, we have an inbuilt accessibility process, that everything that gets released to our customers, whether,i would say, irrespective of the persona, anything that is going out of our company, there is an accessibility review that, takes place. so on the platform side, where i work, we have a thorough accessibility process at the UX design stage. Where, any feature, any new thing that we are designing for the platform goes through, WCAC 2.1AA, criteria. And, we go through that check, we partner with an external firm here that does, you know, our design reviews. I'm an accessibility certified specialist for my team, so I do the initial pass, and then we run it by another vendor. that we have collaboration with. So anything that is going out from a platform perspective, is… is ensured that it meets the WCAG 2.1 AA standard.

RG: Yes, that is the US standard, yeah. Yeah, I think from European perspective, you would have European, I'm forgetting the number, but yeah.

RG: Yeah, yeah, I think, yeah, you… it was the last year directive, right, that all… everything digital has to be, accessible by 2026 or 2025.

RG: Can you be a little more specific, like, do you just generally want to know about how… What we're seeing in industry in general for artificial intelligence, or…

RG: Yeah, I think, I would say that, our company has been increasingly incorporating AI, especially in the areas that you highlighted. So, for example, early literacy support, if teachers need, or, say, automated recommendations for student practice. you know, teacher tools, like, you know, student in a class, you know, do the answer, and then AI summarizes the answers and, you know, gives initial feedback. Of course, with human in the loop. So those are… those are exactly the areas that I would say our company is invested in, to be very honest. What we find the most challenging part right now in the AI space, especially, Because this is such a… new space for all of us, like, including… like, we are all learning at the same time. how do we scaffold the personalized learning, for teachers, and provide that immediate feedback, reduce the teacher workload? I think those are some of the critical areas that we are still navigating ourselves. So we don't have, short-shot solutions for it. We have, like, things here, things there. But it's not, like, a streamlined workflow, in terms of, terms of AI. But these are exactly the areas that even, our company is, supporting. So, the bigger question for the company is, like. how do we design to support both students and teachers in a way that we don't recommend that, okay, replace teachers, but we want to, you know,

enhance the experience and cut down the workload of teachers. So, for example, lesson planning, right? It's such a big task for teachers. So how can we automate that, process for teachers in a way that, you know, you give us some criteria, some context, our company does the lesson planning with all the curriculum resources, assessment, ideas, everything, and then teachers can, with, you know, with the concept of human in the loop, teachers can go and edit what they want to edit, and then use it in the class. So it's more like moving the needle towards AI-driven personalization and instructional support. So that… you know, we reduce the administrative burden on these users. So that's really the, the idea of AI. I think the other AI, in terms of AI, what we are also navigating. is, interoperate… operable… operable… I can never say that word, but basically how… how systems are integrated and connected with each other. So, you know, on the front end, this is what teachers see, but on the back end, all these systems need to talk to each other. Assessment needs to talk to curriculum, and, you know, what students are doing, that needs to talk to what teachers are viewing. So there is a lot of integration that is happening at different levels. Whether it's admins viewing certain reports from there to, you know, the curriculum that is being administered in the classroom. from there to what, you know, students are, experiencing. So, the big part of AI is how do we integrate all these systems together to make sure we are surfacing the most important and the most relevant information for these, these users. So, yeah, there is certainly a shift, and our company is, you know, again, like, in that, space of exploration, with some ideas already out there, but yeah. I'm not sure if I answered your question the way you wanted it, but…

RG: So I can speak to the product area that I serve, so I can speak about the platform, but our company is more than the platform, because we have the curriculum side, you know, which is another team, and then there are a lot of other areas that I'm not… aware of, but I would say, in the space that I work in, decisions are typically… decisions about, like, upgrade or, I would say whether, A certain feature was successful or not successful. it's kind of a combination of things. So it could be direct teacher or district feedback, for that matter. It could be classroom observations that our researchers do. It could be user research studies that we do. Of course, analytics and engagement data, you know, play a very, very big role in it. And then, also, like. how much we align with our curriculum and pedagogical goals, right? So, so I think those… there are, like, various ways of how we, measure the success and how we decide on, decide on upgrade. like, you know, we use a lot of analytics, so when I'm working on anything new, I would go in into our analytics tool, and I would see that,

okay, previously, what was the adoption? Say, what is the frequency of use. If it's a feature upgrade, then how the old feature was adopted and used. Are there… is there any relevant research that I have for administrator, or teacher or student, that I can, you know, look through? And then, overall, yeah, how… how valuable it is for our, for our users. And I would say the other biggest driver is also the business reality, the landscape that we are in. So, especially related to AI, because teachers won't, like, our administrators or teachers won't go in and ask for, like, you know, give me an AI tool for, like, you know, planning. But, a lot of these decisions are understanding the business landscape as well, so to stay competitive in the market. So that also goes into, into consideration while deciding whether anything needs to be added new or upgraded. Or, you know, how successful it was.

RG: Yeah, yeah, it's always… yeah, it's always kind of like that, yes.

RG: Yeah, I don't think so I can answer that question, because I really don't understand the… I'm not part of the content generation teams, so I really don't know what their processes are, and what, you know, the timelines for those processes look like. So, it is, challenging for me to answer this question.

RG: No, I have… I don't have a lot of experience in that space, but I… I do think that… our company aims to balance both, so… For example. Yeah, I don't know, because, for example, from assessment perspective, if I have to think, students… so we have adaptive assessments, so if you're able to answer, like, certain questions correctly, you go to a little, you know, advanced level, then if you're able to… So it kind of adapts to your learning pace and, you know, your things. But it's… it's still not, I would say, self-help, to be very honest. And I don't have experience in that space if you're doing anything that is Self-help, too. Yeah.

RG: Yeah, so a lot of assessment programs that, we have in United States, like some of the competitors as well, so we have adaptive assessments. So… that… yeah, but… I don't think so this is self-help. I mean. Self-help is in the sense that we have a student persona, right? So they have, like, the students can log in, they can see what assessments are due, what assignments are due, like, what are the things that they need to read and learn. So it's kind of that self-serve in terms of the platform, but it's not, Yeah, I don't know, like, what do you mean by self-help in that sense, so…

RG: So we do, yeah, so we do have those kinds of things built in, like, for example, hints or read aloud, so those kind of things are definitely built in, yes.

RG: I think, yes, it is, it is AI, to be very honest, but, The biggest challenge, because ed tech is a very complicated space, It's very important to understand the context in which these people operate in, you know, be it a teacher, or be it an administrator, or be it a student. So, it's very important to understand their workflows. Like, imagine a teacher in a classroom full of 20 students, and you design something. Like, we have to understand her workflow, like, she gets into the classroom, she switches on the laptop, and this is the screen she uses, and this is how her students are placed. Right? Or sitting in the classroom, and this is how she does the grouping. So, it's very important to understand their everyday workflow of administering, any kind of curriculum content or assessment content. And then thinking about AI, like, how can AI augment their, work in a way that it takes away the mundane tasks, and then allows teachers to focus, or, you know, staff to focus, or students to focus on what is the most important thing that they need to focus on. So I think that's… That's where the, like, that's where we need to concentrate, at least in my humble opinion. Like, I, Yeah, I mean, I have two kids, and they both are in elementary school here, so they are second graders. And I'm constantly, like, thinking, okay, how do I augment this? If she's doing good in math, like, how… how does the teacher ensure that, okay, one kid is good in math, I need to give her this, versus two kids are, like, medium range, I need to give them this, and then, you know, three kids need more support, so I give them this. So, it's a very challenging task, right? In a class of 20 students, like, teacher cannot give personalized attention to each and every student. So, how do we augment AI and built AI in a way which allows this personalization without taking away the most important thing that teachers do best, which is teaching. So, so that's how I would put it.

RG: No, actually, actually not. I mean, I just… I just feel that… These platforms are so digital, and, like. The goal of these platforms is so… AI-driven and, you know, like, That we forget the basic fundamentals that a teacher or an administrator operates on in a classroom, or in a school setting, or in a district setting. So, I feel that it's very important for companies like these to, you know, keep in mind their user and their everyday task, because And this is something which is more philosophical for me, that, you know, big problems, everybody's going to come and jump and help. It's the small, everyday problems or challenges that are most crucial, and that makes for a smooth experience. So, how easy the platform is for

teachers, or for anybody to understand, how easily they can access the content that they want to. And, and how easy it is for them to, you know, promote your platform. Because if I like something, I'm going to talk about it. So, I feel that it is very important for any kind of, you know, ed tech companies to really understand what jobs these users do in the system, to truly make this, beneficial for them. So Yeah.

RG: Not sure I was of much help, but if you have any questions, don't, you know, please reach out. I mean, I can always do another call or answer it through email.

RG: To be honest, just acknowledge Kristen. I think we are talking because of Kristen, so I, yeah, she's a dear friend, but, I, yeah, it's totally fine if you don't even take my name. So that's, that's okay, yeah.

RG: Yeah, it's so important, right? I mean, we call it a human-centered design process. There is a reason why we need to call it that way and keep it that way, so I feel keeping users at the center of your decision-making, really helps you make good decisions, so… Cool. Awesome. Thank you. Thanks for reaching out. Bye-bye.

EI answered the questions in a written form; anonimised

1. Accessibility and special usability needs

We design our platform to be usable by as many learners and educators as possible, including people with disabilities. We strive to meet WCAG 2.1 AA standards across the platform, and we regularly test with third-party accessibility experts and assistive technologies such as JAWS, NVDA, VoiceOver, TalkBack and others

Key accessibility features include:

- A responsive web interface that works on desktop, tablet, and mobile, with semantic HTML and
- ARIA to support screen readers
- Keyboard-only navigation and logical focus order.
- High-contrast UI, scalable text, and support for browser zoom.
- Captioning and transcripts for the vast majority of video content, plus support for alt-text on images where provided by authors.
- No reliance on non-standard plug-ins for accessibility; we follow web standards rather than proprietary interfaces

For learners with special usability needs, our features include:

- Self-paced learning with flexible deadlines, allowing learners to adjust speed and workload.
- Downloadable resources (readings, some videos via mobile app) to enable offline access and custom viewing setups.
- Clear, consistent layouts and navigation patterns across courses to reduce cognitive load.
- The ability to control playback speed and rewatch segments to support different processing needs.

For educators and administrators:

- Authoring tools that encourage accessible content creation (structured headings, captions, transcripts, quiz formats that work with assistive technologies).

- Training and internal guidelines for our design and engineering teams so accessibility is built into new features, not added later
- Ongoing accessibility review and inclusion of accessibility criteria in our development lifecycle and future releases.

We also collaborate with customers on specific accommodations when needed, based on commercially reasonable efforts and WCAG 2.1 AA guidance

2. Individualisation and tools that support it

Our core learning model is already highly individualized: learners can choose what, when, and how they learn, within the structure set by the institution or employer.

Key individualisation mechanisms:

- Self-paced courses: most courses allow learners to progress on their own schedule, pause, or reset deadlines.
- Wide range of difficulty levels and prerequisites: from entry-level to advanced, with skill tags and difficulty labels so learners can select appropriate content.
- Modular structure: learners can consume short videos, readings, and assessments in small chunks, revisiting where needed.
- Personalized content recommendations: AI-driven suggestions tailored to learners' interests and past behavior help them discover relevant courses and
- Diagnostics and skill measurement: in certain domains, diagnostics and skills dashboards help align content to skill gaps

Tools that best support individualized learning include:

- Tailored and frequent low-stakes assessments (quizzes, programming assignments, peer review) to let learners check understanding and get immediate feedback.
- Self-paced deadlines and flexible session structures.
- Accessibility options (captions, playback speed, device responsiveness) so each learner can adjust the experience to their needs.

- Learning paths that can be targeted to specific roles, proficiency levels, or development plans.

3. AI solutions on the platform

We have incorporated several AI-powered capabilities to improve learning outcomes and reduce friction for both learners and educators.

Major AI components:

- Coach: an AI-powered learning assistant embedded in many courses. It is anchored in the course content and allows learners to:
    - Ask questions to clarify concepts.
    - Get summaries and note-taking assistance.
    - Practice for quizzes and tests.
    - Explore how course concepts relate to their job or career goals
- Personalized recommendations: off-the-shelf models and analytics recommend content based on learner interests and behavior
- AI-assisted grading and feedback: in selected contexts, learners can receive AI-generated feedback and grades based on rubrics, with the ability to dispute grades; this supports scalable, consistent evaluation without replacing human oversight

Who they serve:

- Learners: Coach and recommendation systems help with comprehension, motivation, and navigation through large catalogs.
- Educators and admins: AI-based insights (e.g., skills, engagement, diagnostics) help institutions understand learning patterns and skill gaps, and optimize programs.

Challenges these AI tools address:

- Reducing dropout and frustration by providing on-demand help.
- Helping learners navigate large catalogs and find relevant, level-appropriate content.
- Scaling high-quality feedback and support to large cohorts.

- Supporting busy educators by automating some feedback and surfacing insights.

Impact on success rates:

While specific uplift metrics vary by implementation and cohort, AI assistance is explicitly designed to:

- Improve course persistence by resolving confusion quickly.
- Increase engagement through more relevant content and just-in-time support. We continuously monitor usage and learner feedback on Coach to refine prompts, guardrails, and UX with the goal of improving completion and skill attainment

4. We follow a structured, data-driven product development and release process.

How we identify opportunities and pain points:

- Usage analytics and monitoring: all backend services are instrumented; we track engagement, completion, performance, and error metrics in real time. Anomalies trigger alerts so issues can be addressed before they significantly impact users
- Continuous deployment and experimentation: we release updates multiple times per day, using automated tests (unit and integration) and monitoring to validate changes
- Structured user research: qualitative feedback from learners, educators, and enterprise customers (interviews, surveys, usability testing).
- Customer feedback and support tickets: patterns in issues and requests feed into the product roadmap.

Decision process:

- We maintain a multi-year product vision focused on helping organizations plan for future skills, develop them, and measure outcomes
- Feature ideas are prioritized on the basis of:
    - Impact on learner and customer outcomes (e.g., skill development, engagement, completion).

    - Alignment with strategic themes (e.g., skills-based learning, AI-enhanced experiences, enterprise integration).
    - Technical feasibility, security, and accessibility requirements.
- We regularly train our design and engineering teams on accessibility and inclusive design to ensure new features maintain or improve accessibility

Piloting and rollout:

- Many features are piloted with selected partners or user segments first, under close monitoring, before wider rollout.
- We often use A/B testing to compare behavior and outcomes with and without a new feature, when appropriate.

Measuring success:

- Product and usage metrics: adoption, active usage, feature-level engagement, time-to-value, error rates.
- Learning and program outcomes: completion rates, time to completion, progression within pathways, and–in some cases–diagnostic or assessment improvements.
- Customer outcomes: program-level analytics in admin dashboards, including participation and completion across populations; integration into customer HR/LMS systems to relate learning to internal KPIs where possible
- Qualitative feedback: structured feedback channels for learners, instructors, and admins, and in-product feedback controls (for example, for AI features).

Platform updates occur as needed and are designed to have no or minimal impact on system availability for learners and instructors

5. What is “hot” right now in ed-tech and digital learning

From our perspective, several trends are especially important and aligned with where we are investing:

Skills-based and outcomes-driven learning:

- Movement from “course completion” to demonstrable skills and role-based capabilities, including diagnostics, skills dashboards, and role-aligned learning paths.
- Stronger connections between learning and employability or internal mobility (e.g., Academies, SkillSets, and professional certificates).

AI-enhanced learning:

- AI coaches and assistants embedded in courses (like Coach) that provide personalized, contextual support.
- AI-assisted feedback, grading, and content authoring to scale high-quality learning experiences.
- More sophisticated personalization and recommendation systems based on skills, goals, and behavior.

Micro-credentials and modularity:

- Short, stackable credentials that can build toward degrees or professional qualifications.
- Modular programs that can be tailored to specific roles, career paths, and organizational skill
- frameworks.

Deep enterprise integration:

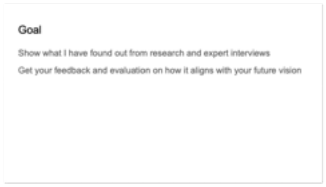
- Tighter integration with LMS/LXP, HRIS, and talent systems to link learning with performance, promotion, and workforce planning.
- Skills taxonomies and analytics that let organisations see which skills they have and which they need.

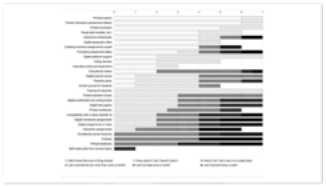
Flexible, accessible, and hybrid experiences:

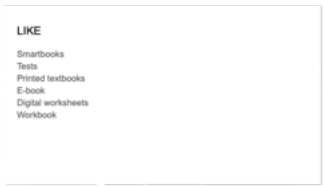
- Self-paced and blended learning models that work across geographies and time zones.
- Continued emphasis on accessibility, mobile-first design, and low-bandwidth options so learning is inclusive and resilient.

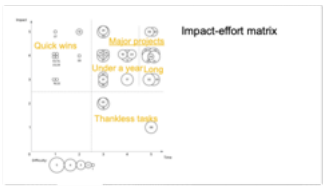
Appendix X. Findings Meeting with the Industry Partner: Presentations and Notes.

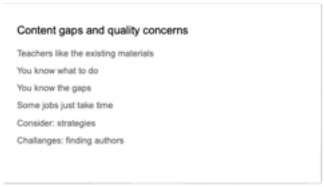
Prsentation

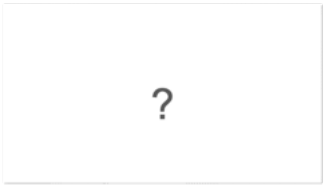


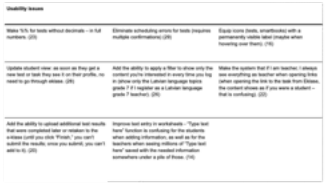


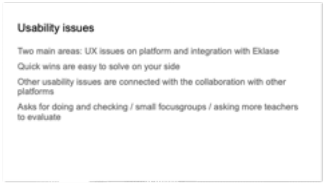












Usability issues

Quick wins:

Eliminate scheduling errors for tests (requires multiple confirmations) (29)

Make the system that if I am teacher, I always see everything as teacher when opening links (when opening the link to the task from Eklase, the content shows as if you were a student – that is confusing). (22)

Equip icons (tests, smartbooks) with a permanently visible label (maybe when hovering over them). (16)

Make %% for tests without decimals – in full numbers. (23)

Usability issues

Short projects:

Add the ability to upload additional test results that were completed later or retaken to the e-klase (until you click "Finish," you can't submit the results; once you submit, you can't add to it). (20)

Add the ability to apply a filter to show only the content you're interested in every time you log in (show only the Latvian language topics grade 7 if I register as a Latvian language grade 7 teacher). (26)

Improve text entry in worksheets - "Type text here" function is confusing for the students when adding information, as well as for the teachers when seeing millions of "Type text here" saved with the needed information somewhere under a pile of those. (14)

Update student view: as soon as they get a new test or task they see it on their profile, no need to go through eklase. (28)

?

Iterative improvements

Iterative improvements		
Add the option to "unlock" content for students in parts. (09)	For worksheets, make a customisable layout with minimal white space (essential for printing). (05)	Add option, for the teacher's profile, the ability to see how the assignment appears from the student's profile. (17)
Create digital workbook overview: see kids work overview; each page is separate at the moment. (15)	Add option to randomise order of text questions and answers for each student in tests (and worksheets).(11)	Organize high school materials according to the optimal level and the advanced level. (25)
Create an option to see students working in real time – see who is stuck, who has completed everything etc.(real-time tracker). (21)	Indicate the essential vs. supplementary content in books and e-books (optimal content + supplementary chapters). (13)	Add possibility to sort assignments by assignment date or last activity (now, Started and completed tests in a single section, but organized separately). (34)
Combine the book's content, learning activities, and tests by subtopics so that users don't have to switch between sections (currently, these are three separate sets of materials) – topic: learning outcomes listed, smartbook, video, feedback linked with assignments – all together, that would be the ideal solution. (24)		

Iterative improvements

Theme: Organisation of information

- Upper secondary: levels vs. grades
- Structure of materials

More to explore – what is needed exactly and what works

Asks for prototyping and focusgroups

Structure of materials, proposal

Subject: Biology → See all grades

Grade: 7 → See all topics

Topic: Breathing → See all materials in one page on the topic

Materials: learning outcomes, e-book, smartbook, worksheets, formative test, final test, videos, etc., *maybe also thematic plan part* → Click any and can assign, see student progress, etc.; when press back (both on platform or browser, gets back to the topic)

Similar: smartbooks, all materials

Iterative improvements

Quick wins:

Add the option to "unlock" content for students in parts. (09)

Indicate the essential vs. supplementary content in books and e-books (optimal content + supplementary chapters). (13)

Short projects:

Add option, for the teacher's profile, the ability to see how the assignment appears from the student's profile. (17)

Add possibility to sort assignments by assignment date or last activity (now, Started and completed tests in a single section, but organized separately). (34)

Combine the book's content, learning activities, and tests by subtopics so that users don't have to switch between sections (currently, these are three separate sets of materials) – topic: learning outcomes listed, smartbook, video, feedback linked with assignments – all together, that would be the ideal solution. (24)

Add option to randomise order of text questions and answers for each student in tests (and worksheets).(11)

Iterative improvements

Long projects:

Organize high school materials according to the optimal level and the advanced level. (25)

Thankless tasks:

Create digital workbook overview: see kids work overview; each page is separate at the moment. (15)

For worksheets, make a customisable layout with minimal white space (essential for printing). (05)

Not evaluated:

Create an option to see students working in real time – see who is stuck, who has completed everything etc.(real-time tracker). (21)

?

Missing features

Missing features		
Being able to differentiate – different sets of various tests or levels for the students (individually tailored). (12)	Add feedback option to give students on completed assignments (might incorporate AI or just teacher comments). (19)	"Start with this, do that" – if students get stuck, there should be automatic hints (self-help and guidance before the teacher). (08)
Create materials so that students can learn independently. Video + smartbook + short quiz for feedback. (04)	Upgrade accessibility of the platform for students and teachers: option to: change bigger-smaller letters, contrast, text-to-speech etc. (30)	Add the ability to organize information within a presentation from the existing content; with ability to add own slides. (27)
Create a virtual tutor / assistant for each student with the help of AI (reminds, explains, suggests strategies, is safe, etc.). (35)	Add a timeline somewhere for every class: year overview + where are we at the moment (and the content getting suggested as the topic goes). (05)	Automatic checking and grading final tests, connect with eklase. At least the ABC tests (next level: add AI that helps with grading open-ended questions). (16)
The ability to embed other informational sources from external resources in smartbooks, tests and worksheets – the ability to combine multiple worksheets into one. Building blocks of information in the platform + self-created blocks. (10)	Rebrand and remake the platform as a tool for lesson creation and storage for any subject on the top of being a digital library of teaching materials – create an option for teachers to create their own supplemented, personalised collection of assignments and lessons. (32)	

Missing features: themes

Accessability

Individualisation for students

Personalisation for teachers

Use of AI

With some overlapping...

Missing features

Accessability:

Upgrade accessibility of the platform for students and teachers: option to change bigger-smaller letters, contrast, text-to-speech etc. (30) – LP

Individualisation for students:

Add feedback option to give students on completed assignments (might incorporate AI or just teacher comments). (19) - GW

Being able to differentiate – different sets of various tests or levels for the students (individually tailored). (12) - SP

Create a virtual tutor / assistant for each student with the help of AI (reminds, explains, suggests strategies, is safe, etc.). (35) - LP

Create materials so that students can learn independently. Video + smartbook + short quiz for feedback. (04) - LP

"Start with this, do that" – if students get stuck, there should be automatic hints (self-help and guidance before the teacher). (08) - TT

Missing features

Personalisation for teachers:

Automatic checking and grading final tests, connect with eklase. At least the ABC tests (next level: add AI that helps with grading open-ended questions). (16) - SP

Add a timeline somewhere for every class: year overview + where are we at the moment (and the content getting suggested as the topic goes). (05) - SP

Add the ability to organize information within a presentation from the existing content; with ability to add own slides. (27) - SP

Rebrand and remake the platform as a tool for lesson creation and storage for any subject on the top of being a digital library of teaching materials – create an option for teachers to create their own supplemented, personalised collection of assignments and lessons. (32) - LP

The ability to embed other informational sources from external resources in smartbooks, tests and worksheets – the ability to combine multiple worksheets into one. Building blocks of information in the platform + self-created blocks. (10) - LP

AI usage:

Create a virtual tutor / assistant for each student with the help of AI (reminds, explains, suggests strategies, is safe, etc.). (35) - LP

Automatic checking and grading final tests, connect with eklase. At least the ABC tests (next level: add AI that helps with grading open-ended questions). (16) - SP

The experts

Expert RG –

Senior UX Design Manager, major K-12 ed-tech company (USA).

Expert EI –

Representative, large-scale digital life-long learning platform (global).

Questions for experts

Accessability

Personalisation for students

Individualisation for teachers

Use of AI

+ Upgrading the Platform
+ Broader Ed-Tech Insights
+ Emergent Themes
+ Other

Accessability

Non-negotiable
Now - some features are there but everything might not be working (no accessibility expertise done)
If someone complains, Consumer Rights Protection Centre can start a case, and then it's just a month to resolve

Accessability

1. Adopt **The European Accessibility Act** fully as the baseline accessibility standard across all new and existing features — this aligns with both expert practice and EU legal requirements.
2. **Assign or train an internal accessibility lead** (analogous to RG's role) who performs initial design-stage reviews before external audit.
3. Engage a **third-party accessibility auditor** at least once per major release cycle.
4. Ensure all **video content carries captions and transcripts**. For a preschool platform, this is especially important for learners with hearing differences and for teachers reviewing content.
5. Prioritise mobile responsiveness and low-bandwidth resilience: EI's experience confirms these are both accessibility and equity issues in diverse geographies, and might be relevant in Latvia as well.

Personalisation for students

Teachers can't access all students equally in the class

Curriculum intervention modules

Individualisation should not mean full learner autonomy, especially for younger learners, but rather teacher-guided, data-informed differentiation.

Teacher-led and student-driven personalised learning

Personalisation for students

1. Introduce **learner profiles** or progress dashboards visible to teachers, showing each student's current level, completed content, and identified gaps — the foundation of teacher-orchestrated differentiation.
2. Allow teachers to **assign different content** paths or resources to different students or groups within the same class, rather than assigning one set of materials to all.
3. Build **'intervention' or 'extension' resource bundles** that teachers can attach to specific learners based on assessment outcomes — mirroring the core curriculum + intervention model described by RG.
4. Implement **adaptive low-stakes quizzes** that adjust difficulty based on student response patterns, providing immediate feedback to both student and teacher.
5. Develop **learning path templates** that teachers can customise per student or group, reducing the planning burden while preserving professional judgement.

AI use (& personalisation for teachers)

Always - teacher in the loop

Lesson planning

Teachers are automatically informed if other teacher has thought something on the same topic already

Right time to invest

AI use (& personalisation for teachers)

1. Begin **AI integration with lower-risk, high-value** features: AI-generated feedback on student written responses (with teacher review), and AI-powered content recommendations based on teacher-set curriculum goals.
2. Develop an **AI lesson-planning assistant**: teacher inputs topic, year group, and learning objectives; AI proposes a lesson structure drawing on platform content; teacher reviews and publishes. This directly addresses teacher workload, which both experts identified as critical.
3. Pilot an **AI learning assistant** ('coach') for older primary students anchored in platform content, not open-ended, to support comprehension and self-directed review.
4. Ensure all AI features maintain a **visible human-in-the-loop mechanism**. Teachers must be able to review, override, or edit any AI output before it reaches students.
5. **Invest in back-end system integration** as a precondition for meaningful AI: assessment data, curriculum content, and teacher dashboards must be connected to each other before AI can surface useful insights across them.
6. Communicate AI capabilities **transparently** to teachers and parents, particularly important in the Latvian context where trust in digital tools in early education must be built carefully.

Platform evolution

Deep understanding of teacher workflow

Classroom observations

User research

Analytics and engagement data (adoption, frequency of use, feature-level engagement)

Alignment with curriculum and pedagogical goals

Business landscape and competitive analysis

Platform evolution

RG: "Big problems, everybody is going to come and jump and help. It is the small, everyday problems or challenges that are most crucial, and that makes for a smooth experience. How easy the platform is for teachers — or for anybody — to understand, how easily they can access the content that they want to. And how easy it is for them to promote your platform. Because if I like something, I am going to talk about it."

Platform evolution

1. Conduct structured teacher workflow research before designing the lesson-creation tool — observe how teachers currently plan lessons, what pain points they experience, and what they wish the platform could do. RG's emphasis on workflow understanding is directly applicable here.
2. Build a teacher-facing content authoring environment that allows: uploading own materials, organising them into lessons or units, combining platform content with teacher-created content, and sharing with colleagues.
3. Implement a year timeline / curriculum planning view for teachers — a visual overview of the school year with materials, milestones, and assessments mapped across it. This directly addresses the sixth key area identified by the industry partner.
4. Introduce analytics dashboards for teachers showing: which content is being used, how long students spend on tasks, completion rates, and assessment outcomes — enabling data-informed decisions analogous to what RG described.
5. Adopt a pilot-then-scale release methodology: test new features (especially AI and authoring tools) with a small group of willing teachers before platform-wide rollout. Collect qualitative feedback during pilots.
6. Establish a continuous feedback channel for teachers — a lightweight in-platform mechanism for reporting issues or suggestions, feeding directly into the product roadmap.

Emergent Themes (Cross-Cutting)

Growing importance of parent-based features

Teacher workload

Systems talking to each other

Four-persona model (students, parents, teachers, administration)

Competitor analysis (go and research global)

Authoring tools

Adaptive assessments

RG: "keeping users at the centre of your decision-making"

Ed-Tech insights, not school specific

1. **Understand the user's everyday workflow first, design second**
2. Skills-based and outcomes-driven learning, moving from course completion to demonstrable, role-aligned capabilities
3. AI-enhanced learning: coaches, assisted grading, personalised recommendation
4. Micro-credentials and modularity: short, stackable credentials; modular programmes
5. Deep enterprise integration: connecting learning to HR systems, workforce planning, and internal mobility
6. Flexible, accessible, and hybrid experiences: self-paced, mobile-first, low-bandwidth options

?

I would like to know

Why did you agreed to collaborate?

And by the end? Anything useful?

Have you integrated anything already?

What would you consider implementing from the major projects segment?

How does the company measure whether teachers are really engaged vs. just subscribed?

Plans to expand?

Notes from the meeting, main ideas etc.

Has anything discussed at our previous meeting already been implemented? – Something that can be resolved quickly with the digital platform team. They've looked into it and will implement it in the next iterations. They have their own plan for the major tasks, but day-to-day support is still provided. In collaboration with SIS, which was involved, they included it in the to-do list.

Regarding content. Agree that this is the case. Regarding videos, they acknowledge that they are valuable; where possible, they are being created. Essentially, this is a larger investment.

Usability. No comments.

Iterative improvements:

Regarding the division of materials in high school by levels and grades. There is no data on all schools, but there are schools that use levels, while others still use grade-based divisions. Everything was built around the grade-based framework; currently, we have decided not to change anything. Because there are also topics that apply to multiple levels. In mathematics, for example, there are 14 textbooks in secondary school, most of which are Level I, but a significant portion is also appropriate for the next level. Since these books are organized by topic, they can be used as and when desired; the teacher can plan this themselves.

Digital worksheets. We've already done a lot for printing, with colors adapted for lower ink consumption. We see that a lot is printed on the digital platform. We design the worksheets so that less ink is used when printing. Digital worksheets aren't used as much as the printed ones. Our intention was to show that this also works digitally, but perhaps it hasn't turned out to be the most convenient method.

Overview: An interactive thematic plan is already being developed, and that could also reorganize things to make them more convenient.

Major projects. Accessibility. Those responsible for accessibility are aware of all this, and the platform meets current standards–implementation is taking place gradually. Regarding technology and internet speed, it is important how the school's infrastructure is built so that everything works at an adequate speed.

Regarding expert opinion and experience.

Several things are already on the table; several seem like too large an investment to implement in the Latvian context.

There is a mobile device adaptation of the digital platform.

Creating our own courses. If the motivation is an exam, then if you want to, you won't study what's necessary only for yourself.

Regarding AI as well–we've tested this and that, and new solutions will be available soon. Also regarding learning paths–someday all of that will be in place.

In summary, I could also recount most of what the experts said; most of these things are being done here as well. We're watching to see which of these will have the greatest impact in the short and long term. And what the competitors are doing.

Why did you agree to collaborate? 1) Why not help if you can? 2) It's very interesting to hear from the outside. You mentioned the service design program, and it seemed interesting.

Does it make sense? Probably. At first, I saw it as a perspective on the teaching ecosystem, but the digital platform also falls within my area of responsibility–though not entirely. In the end, it all comes down to the platform; it would be more valuable to share this with the colleague in charge, since it's not exactly within my direct area of oversight. Valuable information. And the fact that it's about the platform–that's fine; it's not a criticism. Looked at the overall flow; interesting how it's connected, but more about the platform. The conclusions are valuable, but not directly to me–they're useful for the company. I can't answer for many things–whether that's the case or if there's a six-month plan. Overall, I know where we're headed, but not all the details.

What else could be implemented? Most of the suggestions made by both experts and teachers weren't particularly surprising. When it comes to implementation, we can't rely solely on the opinions and wishes of a single school. From what I've discussed with teachers regarding the creation of their own teaching materials and the development of test questions, these are the wishes we're already aware of. But at this moment, the functionality has been chosen as it is. But if anything changes, we're ready to implement something. Regarding AI matters,

exactly what we found in the research: the fastest and simplest things for the development team–that's what we're working on. There were no major surprises. For certain features, there are UX usability issues–a large portion of them exist, but not in the same way that survey respondents use them directly in their daily lives or haven't been used to that extent; each interface issue is a bit different. Regarding the time that needs to be invested, more extensive research is required here to make a decision. There are many things on the table that could be done, but then the digital platform team decides what to do with all of this over the next 3–4 months. Yes, we'll consider it!

What could theoretically be done. That afterwards, I could share this experience with the digital platform lead and his team, and also create or design a user research template for the team to use going forward. That could be valuable.