

NOTEURA: AI-POWERED LEARNING ASSISTANT FOR IMPROVING STUDY RETENTION
AND REDUCING STUDENT STRESS

by

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LIST OF ABBREVIATIONS

AI - Artificial Intelligence

API - Application Programming Interface

ARR - Annual Recurring Revenue

B2B - Business-to-Business

B2B2C - Business-to-Business-to-Consumer

B2C - Business-to-Consumer

CAC - Customer Acquisition Cost

CI/CD - Continuous Integration / Continuous Delivery

CPL - Cost Per Lead

EdTech - Educational Technology

KSE - Kyiv School of Economics

LLM - Large Language Model

LMS - Learning Management System

LTV - Lifetime Value

MRR - Monthly Recurring Revenue

MVP - Minimum Viable Product

PMBOK - Project Management Body of Knowledge

SaaS - Software as a Service

STEM - Science, Technology, Engineering, and Mathematics

UX/UI - User Experience / User Interface

Abstract

This paper examines a business plan for the creation and further development of a web platform - Noteura, which is designed for learning based on artificial intelligence, and focuses on adaptive learning taking into account the cognitive state of the student, the main target audience of the product is working students. The product covers the problem of the lack of a product on the market that combines generalization of materials, creation of summaries and adaptation of learning to a particular situation, for example, a tired or, conversely, motivated student to study today.

The study included a survey of students ($n = 88$) of the Kyiv School of Economics (see Table 9), an analysis of competitors of the main players in the market (see Table 6), and a review of available sources of information and scientific research. The results of the study confirm the hypothesis that for working students, unconstructive presentation of materials, passive learning, and permanent overload are common problems among them. The survey shows that 69.3% of survey respondents report difficulties in familiarizing themselves with new material due to the lack of structure (see Section 4.1), and 70.9% remember approximately half or less of the studied content after two weeks (see Section 4.2).

The Noteura product is a solution to these problems, the product converts downloaded content into structured summaries, cards and tests (see Table 1) + adding the main feature, namely AI Memory Coach, which distinguishes the product from other players on the market and performs the role of adapting any material downloaded to the system in the format of PDF files, videos, YouTube links into constructed material, tests or flashcards, taking into account the construction of session intensity based on self-assessment of fatigue and observed behavioral patterns (see Section 2.4). The main logic of adaptation is based on the theory of cognitive load and has been tested through cooperation with a specialized methodologist in the product development team (see Section 3.3).

Chapter 1. Introduction

1.1 Problem Context and Relevance

The main motivation for creating this product is a fairly common problem that is increasingly common among students: the learning process takes a lot of time, a significant part of the material is forgotten, and the process often seems exhausting even before the memorization of knowledge begins.

To support the hypothesis regarding the existence of this problem, information was found indicating that, according to 25 studies indexed in Scopus, the prevalence of burnout among students ranges from 38% to over 60%, and a high study load, curriculum demands, and long study hours were identified as consistent major risk factors (Preprints.org). A separate analysis of US college students from 2024 to 2025 found that 44.5% reported procrastination and academic overload, which negatively affected their academic performance - a pattern not related to bad habits but to prolonged emotional stress that reduces the ability to start a task (High5Test). This problem is especially acute among students who combine study with work, and a survey of students was conducted to confirm this hypothesis (see Chapter 4): time pressure and limited recovery time create conditions in which burnout progresses before the student has time to master all the material. The methods that most students use are less effective for long-term retention of knowledge. At the same time, the EdTech market is rapidly evolving to help students master the material more easily and without taking up too much of their time. There are quite a few AI-based tools on the market for note-taking, summarization, and content processing. Most of them are subscription-based, such as products like Turbo AI and Coconote. A detailed analysis of the competitors (see section 2.10) showed that these products are actually used and these users have brought significant revenue to their developers, confirming that students need help in this area and are willing to pay an equivalent price for them. However, this competitive analysis shows that existing tools solve the content processing task, but they stop there. Currently, there is no solution combines content processing + emotional adaptation + session planning.

1.2 Problem Definition

The main problem that Noteura should solve is that during the learning process, students constantly have to process different volumes of materials, often quite large (this statement is based on their own subjective learning experience), sometimes presented in a chaotic order under time constraints. To prepare for exams or simply seminars, students use methods that are in most cases poorly suited for long-term memorization, especially when, very often, students are exhausted and in a deteriorated emotional state. At the structural level, students sometimes lack a simple understanding of where to start mastering the materials, what is the priority, what can be ignored in order to avoid repeating the material already worked out. The survey data collected as part of this study confirm this: 69.3% of respondents reported difficulties in engaging with new material due to the lack of a clear learning structure (Section 4). For memorization, students choose more passive methods, such as rereading and highlighting, despite the evidence that they provide poor long-term memory compared to active memorization and spaced repetition (Roediger and Karpicke 251; Cepeda et al. 371). Considering the emotional level, then in conditions of overload, the student not only decreases productivity, but also the desire to engage in learning. The research found shows that students who are in permanent stress choose simpler passive methods for themselves precisely because active learning seems too demanding and time-consuming at a time when they are already overloaded (Tandfonline). As a result, a person gets cyclical in his learning - due to overload, the student chooses a passive learning strategy, which ultimately leads to poor memorization, as a result, a person has to spend even more time on repetition, which leads to the initial point of overload.

Existing tools on the market partially solve this problem. They help build a structure, but it is not a fact that they help improve memorization and take into account the emotional state. Tools that contain flash cards solve the issue of memorization, but require manual effort and ignore the current emotional state. Noteura is designed to be the intersection of all three.

1.3 Idea of the Product

A website will be developed to solve the problem found, in the future it is planned that this may become a separate program - Noteura. This platform is developed on the basis of artificial intelligence to increase student productivity, and most importantly - to positively affect their emotional state. The basic task of the platform is planned to be structuring large volumes of educational materials, the presence of flashcards for memorization, converting video content into lectures with examples and other educational tools. The system itself structures all the content provided to it, finds and highlights key information, and also converts it into a high-quality summary. In the future, it will be possible to choose memorization methods - tests, flashcards, parsing examples for the necessary understanding of the topic, etc. These functions are basic and are aimed at supporting active reproduction of information and improving long-term memorization. The main feature that distinguishes Noteura from existing products on the market is AI Memory Coach. Thanks to this feature, which is also based on artificial intelligence, students will be able to receive tests/flashcards/summaries that correspond to their emotional state. Based on the interaction in the early stages of memorization, the assistant will read the number of correct answers, feedback and other key indicators. Accordingly, based on the results, it will be able to provide materials that are more adapted to the situation and state of the student, which will be easier to perceive. Thus, AI Memory Coach aims to increase motivation and productivity, while reducing cognitive overload.

At the MVP stage, the adaptation logic is based on rules: certain combinations of input data trigger certain reactions. In subsequent versions of the application, the product is planned to add session reports, weekly reports on learning models, and, as necessary, a personalized model based on collected user data that helps set the required pace, with already analyzed and selected formats that are most preferred by the user, taking into account all the user's weaknesses. This plan is discussed in detail in section 2.4.

Chapter 2. Lean Canvas

For product development, was chosen the Lean Canvas framework, as this research tool is specifically designed for early-stage startups. The framework includes key elements such as customer segments, value proposition, revenue streams, and cost structure. This tool can be used to identify product problems and weaknesses during the planning phase, and it helps to test the product under uncertainty.

The framework was introduced by Maurya (2012) as a startup-oriented version of the Business Model Canvas.

2.1 Problem

Most students face the problem of overloading with the amount of materials during their studies, especially when they combine studies with work. The volume of materials is usually quite large considering the limited time (subjective opinion, based on personal learning experience). Currently, there are quite a few different methods that most students rely on, such as rereading materials, highlighting important points in notes, and re-watching lectures, but as the research that has been done (in section 1.1) shows, they are among the least effective for long-term memorization. Tools on the EdTech market already partially cover the problem, but there is no product on the market that takes into account the emotional state of the student during the learning process. A student who has had a difficult emotional and physical day is more likely to need a different approach to learning than someone who is full of energy and had a day off today. This is why Noteura was created.

2.2 Customer Segments

During the research, three potential consumer categories were identified for behavioral pattern analysis for quality product implementation. Our main target audience is students who are overloaded with large volumes of materials during their studies.

2.2.1 Primary Segment

The main target audience of the product is senior undergraduate and graduate students who combine study with work. The user is described in detail below using the Persona framework. (Cooper 123-138) (see Fig. 1). Most of these people have limited time due to workload and in the conditions of study they have to process a large amount of educational material, which quite often happens in a limited time. As a result, burnout is possible due to overload and as a result, low motivation. Due to these limitations, it is this group of people who are ready to look for various tools that will help them facilitate the process of processing large volumes of materials and help structure them. Quite often, since they work, users are ready to pay for it.

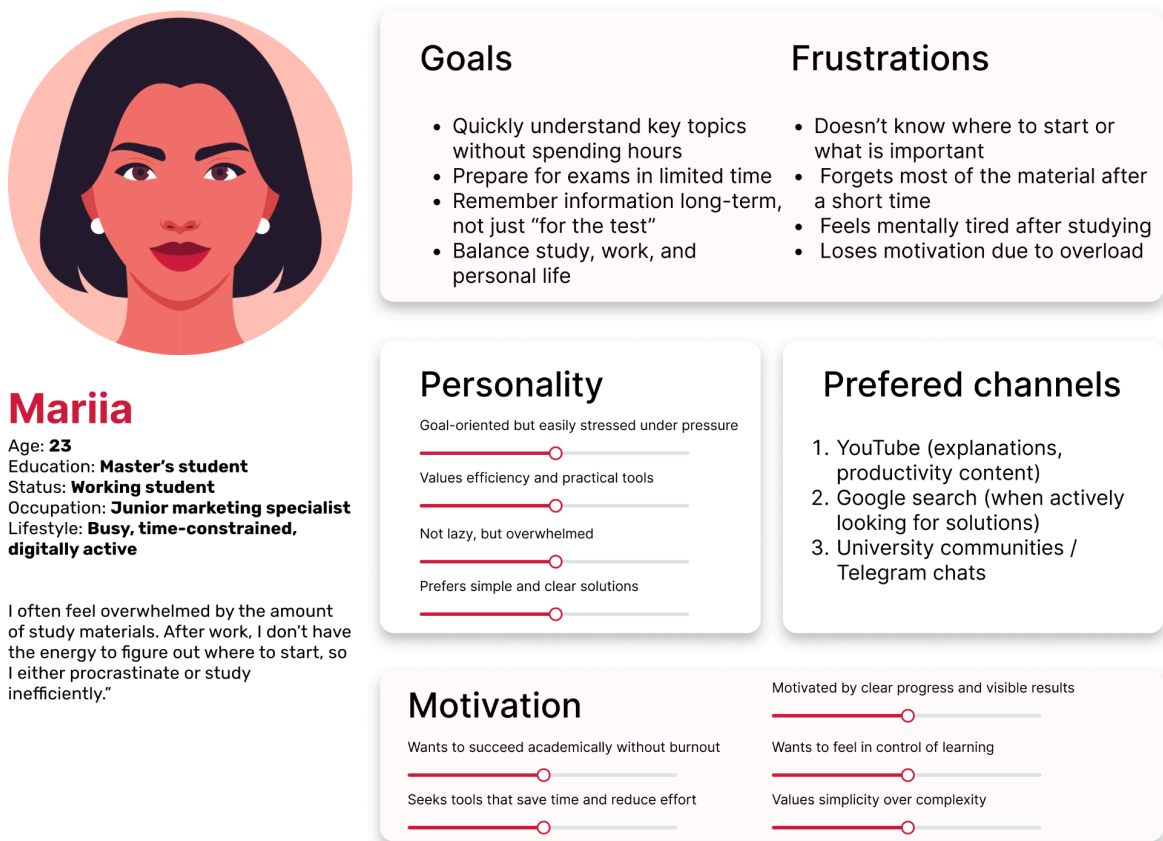


Fig. 1. User persona: Mariia, a 23-year-old working master's student representing Noteura's primary customer segment; Authors' own analysis based on survey data; persona framework adapted from Cooper (123-138).

2.2.2 Secondary Segment

Another category, less mainstream but possible, is students of educational platforms (such as Coursera, Genesis Academy, Genius Space, etc.). Digital learning is more structured, more accessible, but it is still exhausting and often does not take into account the emotional state of the student. These users also feel overloaded, but their engagement and willingness to pay are not as obvious and can vary depending on the length and meaning of the learning.

2.2.3 Future Segment

The third category is people who are self-taught. Very often, the lack of structure and not fully understood motivation can become an obstacle here (the hypothesis is built on subjective opinion). At the same time, motivation and behavior during learning can possibly become a positive pattern during learning and provide a long-term user if they need such features as adaptive notes and tests, or a user progress map

In this study, everything was based on the first target audience (see section 2.2.1), as this is the most relevant group for this type of product at the development stage.

2.3 Unique Value Proposition

The main task of the Noteura product is to convert all the educational materials uploaded to the resource into a structured outline with the construction of a specific learning roadmap for the user. Additional learning tools such as flashcards and various tests are provided with the outline. This platform will allow not only to effectively process information, but also to reduce emotional stress due to adaptability based on the user's previous answers. For example, if the user answers poorly, this is probably a signal to the system that he is overtired and it is difficult for him to master the material provided above, the system should read this as a signal that it is necessary to make the test easier, or update the outline with more simplified words or terms.

Based on the identified problem (see section 1.2) and user research (see section 4), the following hypotheses were formulated:

Problem hypothesis:

Working students experience permanent emotional overload due to the unstructuredness and volume of educational materials and the lack of sufficient time.

Solution Hypothesis:

Structured and adaptive learning sessions help reduce perceived overload and increase learning efficiency.

Value Hypothesis:

Students are willing to pay for a tool that will help save time and provide quality notes that streamline the learning process.

Retention Hypothesis:

Adaptive learning should increase user engagement

Based on these hypotheses, it is planned to develop a product that should combine all the key functions required by the user to structure materials, systematize the learning process, qualitatively assimilate materials and correct overload through adaptive learning based on the analysis of responses (for example, perceived fatigue or difficulty).

The key distinguishing feature of the product is the AI Memory Coach. This is an assistant built on the basis of AI, which adapts the intensity and format of training sessions depending on the user's state at the moment by analyzing his answers or responding to the user's direct signal of fatigue from a hard day, or vice versa to increase the intensity if the user is full of energy and strength for learning.

2.4 Solution

Three main problems that students face have been identified. For each problem, Noteura offers a specific solution.

2.4.1 Problem 1: Students Feel Overloaded and Burned Out

Solution: Adaptive session management based on cognitive load signals

At the beginning of the session, the user determines his level of fatigue on a scale from 1 to 5 so that the system can offer an adaptive solution at the very beginning. Also, the system reacts to the aspects laid down by the scientific methodologist throughout the session (see section 3.3). Namely, the system's reaction should be to such signals as the speed of the answer, the reaction to difficult questions, whether the student missed them, perhaps the student rejected the session, etc., and what mistakes the student makes, and whether something unites them.

If the student has a bad result during the test: or using flash cards, this does not give a clear signal to the system that the student is tired. Perhaps the material was too complex and not presented as clearly as the user needs.

The product will issue an adaptation in the event that several signals are combined and make a more holistic picture, and not based on 1 aspect. The logic is planned to work as follows:

- Self-rated fatigue + slow responses to different topics = session load will be reduced and learning format will be adapted to key takeaways from materials, flash cards
- Slow responses focused on one specific topic = material in that topic is adapted, namely additional material can be added, rather than the other way around changing the load.
- Skip questions + premature termination = this is a clear signal to the system that indicates overload, the user is offered a short break, the material is simplified and presented in a shorter but more meaningful format

- Low accuracy on various topics + normal response speed = possible problem with the quality of learning and a sign to the system that it is worth repeating, additional flashcards and summaries, without changing the difficulty

This approach is based on Cognitive Load Theory (Sweller 273), which shows that learning becomes much less effective when a person's working memory is full. By keeping each session within a manageable load, Noteura helps students stay consistent instead of burning out and quitting.

AI Memory Coach - how it develops after MVP:

At the MVP stage, the logic is rule-based: simple conditions trigger specific responses. After collecting the analytics of MVP, Noteura plans to add two basic features that make the coach more personal and useful over time:

- Iteration 1 - Session summary.

After each session, the user will see a short summary, exactly how many questions they answered correctly, which topics need to be investigated more and what will be reviewed first in the coming session. It shows a student a result of their work and creates a repetition of using the product.

- Iteration 2 - Discovering a unique learning pattern.

Once a week, on the home tab user sees a weekly report: at what time of day they study best, which formats work better for them (quiz, flashcards or speaking with AI Memory coach) and how much material they covered during past week. It helps students understand their own pattern and stop trying to use ineffective studying, like rereading

After collecting data of each user, the product become a personalized model that knows each student's pace, format preferences, strengths and weak areas. Noteura is represented as a tools like ChatGPT or Notebook LLM cannot offer, because they have no memory of past learning sessions.

2.4.2 Problem 2: Students Forget the Studying Material

Solution: Active learning material generation

The user uploads a file or a link and Noteura automatically creates flashcards, quizzes and detailed notes from it (see Table 1).

Table 1. Input/Output

Input	What the system does	Output	Expected benefit
PDF (notes, textbook)	Finds key ideas, creates a short summary	Flashcard set and condensed notes	Ready to study in under 2 minutes
YouTube link	Turns speech into text, finds main topics	Quiz questions and key point list	Turns passive watching into active recall practice
Web article or URL	Reads the text, finds the main arguments	Summary and comprehension questions	Saves reading time, improves memory of core ideas

Source: Coconote. "Coconote: The Top Rated AI Note Taker." *Coconote*, 2025; Turbo AI. "Turbo AI - AI Note Taker & Study Tools." *Turbo.ai*, 2025; HyNote. "HyNote: AI Note Taker for Meetings, Audio & PDF Summaries." *HyNote*, 2025; Google Blog. "6 NotebookLM Features to Help Students Learn." *Google*, 2025.

Research shows that people forget up to 66.3% of new information within 24 hours without review (Ebbinghaus 77). Flashcards and quizzes based on spaced repetition and active recall are proven to fight this - but most students do not use them because setting them up takes too much time (Roediger and Karpicke 253; Cepeda et al. 371). Noteura removes this barrier by creating these materials automatically.

2.4.3 Problem 3: Students Do Not Know How to Plan Their Studying

Solution: Goal- and deadline-aware study planning

Most AI tools help the user take a summary of notes and stop there. However, Noteura has the advantage of forming with the user the purpose of the note and the deadline for studying it.

For example: a student uploads a PDF file and says that he has an exam in 3 days. The platform divides the flashcards and tests into 3 sessions, one for each day. After the session is over, it adjusts the plan for the next day based on what was difficult for the student and how confident he feels about the material.

AI Memory Coach: iteration 3 (post-MVP)

Adaptive planning: the platform will plan more complex topics for learning at the beginning, and leave repetitions for the end of the session, for a qualitative distribution of the load during learning. After each session, the learning plan will be updated taking into account the current status and success in learning, which gives the Noteura product an additional advantage in adapting to each student and his pace of learning.

2.5 Channels

Noteura's go-to-market strategy consists of two parts. The first is MVP channels focused on reaching students through the web platform, while the second focuses on future channels that are already becoming relevant after the product has proven customer retention analytics.

MVP Channels (web-first, direct-to-consumer)

At the MVP stage, Noteura will launch as a website. Students usually work with PDFs, YouTube lectures and URLs on their laptops, so a web-first approach focuses more on how the target audience actually studies. It also includes advantages both for the product team and users, due to updates going live instantly, without any App Store/Google Play Store review cycles and early users can get a trial usage by simply opening a link.

The goal at this stage is to reach students directly, without any long sales cycles or technical integrations.

A real case of this approach is a competing AI note-taking app Coconote, that reached between \$300,000 and \$500,000 in monthly revenue during its viral growth phase in 2025, stabilizing at \$200,000/month as of April 2026, still from just 30,000 downloads and without any paid advertising (Growth Hacking Lab; Sensor Tower). They did this without any institutional partnerships, or paid app store ads. Growth came entirely from TikTok content, YouTube SEO and student-targeted organic content (Growth Hacking Lab). Noteura plans to follow the same approach.

1. Student communities online

Existing student spaces where the target audience already talks about studying, productivity and tools are the best point to start:

- Reddit communities: r/GetStudying, r/studytips, r/productivity
- Telegram groups for students

The goal here is not direct advertising, but genuine participation in a real exchange of experience using certain tools for productive learning. For example: "I use this tool when I have a lot of

material and little time due to a full-time job, and it saves me about 2 hours of preparation," as a rule, this works better than paid advertising at an early stage.

2. TikTok and Instagram (study content)

“StudyTok” is a large and very active industry among the users that Noteura is targeting. TikTok videos or reels showing how a product converts a PDF into a set of flashcards in 30 seconds or how a memory coach adjusts a session when a student reports fatigue encourage people to try it for themselves or share the video with their friends.

Coconote created over 7 TikTok accounts, recording lecture halls and student content. This contributed to direct product searches, all before any paid advertising was available (Growth Hacking Lab). This proves that students can be engaged organically, saving on advertising.

3. Referral loop

A simple referral system, such as inviting a friend and getting 50% off the next month, works well in a student network as they learn together and share tools that help them. This turns existing users into a distribution channel without requiring additional budget.

Iteration 2 - Mobile app (post-MVP)

Once the web product is validated and receives first recurring user data, Noteura will have all the proof of its success to launch it on iOS. The mobile app adds a new distribution channel through organic search in the App Store, as students can actively search for learning tools simply through the search bar and comparing the app description and its rating. The Android version will be introduced in a later iteration, depending on user demand.

Future Strategic channels (scale stage)

The channels below are part of Noteura's long-term strategy:

- Integration with LMS (Moodle, Canvas) - embedding Noteura into the university platform will give access to a large number of students. But universities buy such solutions slowly - the process can take from several months to several years. Therefore, this option should be considered when there is already clear evidence that the product works.
- Partnership with Coursera/EdTech - integration with large educational platforms via API and official agreements is a good long-term goal, but not something to start with.
- Direct licensing to universities (B2B) - selling access to the entire university at once is profitable, but difficult. Universities would like to see specific numbers: whether students have become better at studying, or drop out less. This option becomes realistic when Noteura already has such results.

2.6 Revenue Streams

Noteura's revenue model has one core stream at the MVP stage, with two additional streams planned for later phases.

MVP Stage - B2C Subscription

The primary revenue source at the MVP stage is a direct subscription for individual users(see Table 2).

Table 2. Pricing plans (MVP)

Plan	Price	Billing	What's included
Free Trial	\$0	7 days	Full access to all MVP features
Student Light	\$4.99	7 days	Unlimited uploads, Memory Coach, all study formats

Student Pro	\$15	Monthly	Unlimited uploads, Memory Coach, all study formats
Student Pro Annual	\$108	Yearly (\$9/month)	Same as Pro, 40% discount

Source: TechCrunch. "20-Year-Old Dropouts Built AI Notetaker Turbo AI to 5 Million Users." *TechCrunch*, Oct. 23, 2025; Growth Hacking Lab. "How Coconote Prints \$300K/Month from Just 30K Downloads." *The Growth Hacking Lab*, 30 June 2025; HyScaler. "Turbo AI (TurboLearn AI) Review 2026: Is It Safe? (Pricing & vs. NotebookLM)." *HyScaler*, 2026; Sensor Tower. "Coconote - AI Note Taker: App Performance Data." *Sensor Tower*, Apr. 2026.

The product offers 3 tiered subscriptions - light, pro and annual. Light is a weekly plan for \$4.99, which is designed so that the student can use the product only when necessary in the pre-session period. This data is based on the survey in section 4.4, most respondents indicated a willingness to pay \$5. This approach leaves users who only need ad hoc requests, so there is a chance that they will be able to turn to the product for help again during the next session. But in general, the survey of Ukrainian students was mostly done to confirm the need for such a product and to check their willingness to pay for a subscription. All other subscription prices are based on a comparative analysis of competitors in the US market.

At \$15/month, Noteura is priced in the middle of the market, cheaper than Coconote and Turbo AI, which both cost \$19.99/month. Competitors at this price have shown that the model works: Turbo AI reached 5 million users and over \$10M in yearly revenue (TechCrunch), while Coconote makes \$300,000 per month from just 30,000 downloads (Growth Hacking Lab). This shows that students are willing to pay for tools that actually help them.

With an average user staying for 8 months, the LTV is \$120, which gives an LTV/CAC ratio of 2. Features like Memory Coach and adaptive sessions justify a higher price compared to simpler note-taking apps - for example, HyNote starts at \$11.99/month (Sensor Tower).

Noteura offers a 7-day free trial and there are two reasons for this. First, after 7 days of full access, the user clearly understands what they are paying for. Second, it helps avoid the problem that Turbo AI faced: when they switched from a free model to a paid one, users who were already used to the free version reacted negatively to these changes (HyScaler).

A survey of Ukrainian students, conducted as part of this study, showed that about 17.7% of respondents wanted to use the platform for free. This confirms that a free entry point is important, which is exactly what the 7-day trial provides. It is worth noting that these numbers reflect Ukrainian purchasing power and cannot be directly applied to the US market, where competitor prices are the main reference point (see Table 3).

Table 3. Market validation

Competitor	Price	Revenue
Turbo AI	\$9.99–\$19.99/month	\$10M+ ARR, 5M users
Coconote	\$19.99/month	\$200K/month (Apr 2026); peak \$300-500K (2025)
HyNote	from \$11.99/month	\$200K/month
NotebookLM Plus	\$20/month	Google product

Source: Latka, Nathan. "How Turbo AI Hit \$21.1M Revenue." *GetLatka*, Nov. 2025; Growth Hacking Lab. "How Coconote Prints \$300K/Month from Just 30K Downloads." *The Growth*

Hacking Lab, 30 June 2025; Sensor Tower. "Coconote - AI Note Taker: App Performance Data." *Sensor Tower*, Apr. 2026.

Scale Stage - Institutional licensing (B2B)

After the product is validated with individual users and has measurable retention data, Noteura plans to introduce institutional licensing for universities. This stream targets universities that want to support student academic performance and reduce dropout rates caused by burnout and cognitive overload.

Institutional sales require a proven product, measurable outcome data, procurement processes, and multi-month negotiation cycles. It becomes realistic once Noteura has 6–12 months of retention data and documented impact on student performance. Pricing at this stage shifts to a per-seat model, typically in the range of \$4–7 per student per month at volume.

Backlog - EdTech Platform integration (B2B2C)

Selling Noteura as a plugin or feature layer within platforms like Coursera or edX is recorded here as a long-term possibility, not a near-term plan. This path requires platform-level API access, formal partnership agreements, and significant negotiation cycles. It is a strategic option for consideration after the scale stage, once institutional relationships and a proven track record are established.

2.7 Cost Structure

The cost structure of the product is tentatively divided into two main parts. The first is a one-time investment, mostly just costs during the development phase, and the second is monthly operating costs for marketing, employees, continuous improvement, etc. The full cost breakdown is presented in sections 3.2 and 3.3, respectively.

At the MVP stage, the plan is to minimize costs with the help of some solutions. The main solution is to provide requests via API, rather than creating your own AI model, as this is a significant category of development costs. Another structural solution is based on the fact that initially the team will have only 5 people, who will take on all the main functions of product development and development.

The initial costs for developing and bringing the MVP to market are estimated at approximately \$116,000, calculated using a bottom-up approach, where each component has a scope, time, and price at current market prices for developers in Eastern Europe, from where planned to hire people to join our team. More global costs are The largest costs are backend development (\$27,500), AI Memory Coach (\$19,500), and frontend development (\$18,000), which together account for approximately half of the estimated budget. The full breakdown is provided in Table 7, Section 3.2.

After launch, monthly costs are estimated at \$15,500–\$22,000 at MVP stage (~500 active users), rising to \$22,000–\$32,300 at growth stage (~5,000 active users). The largest ongoing cost is staffing, which is \$11,000 – \$15,500 per month. The cost of using the AI API varies by usage: approximately \$300–\$500 per month at 500 users, rising to \$2,500–\$3,500 per month at 5,000 users. A full breakdown is provided in Table 8, Section 3.3.

Comparisons of similar products in the market confirm that this cost structure is financially sustainable and realistic at a moderate scale (see Table 4).

Table 4. Market Viability Benchmark

Competitor	Monthly Revenue	Total Funding Raised	Pricing
Turbo AI	\$1.75M+ (est. from \$21.1M ARR)	\$750,000	\$19.99/month

Coconote	\$200,000 (Apr 2026), peak \$500K (2025)	Undisclosed	\$9–19.99/month
HyNote	~\$200,000 (2025)	Undisclosed	from \$6.66/month

Source: Latka, Nathan. "How Turbo AI Hit \$21.1M Revenue." *GetLatka*, Nov. 2025; Sensor Tower. *AI Note-Taking Applications - Market Data*. Apr. 2026; Growth Hacking Lab. "How Coconote Prints \$300K/Month." 30 June 2025.

Turbo AI’s annual revenue reached \$21.1 million after investing only \$750,000, which truly proves that EdTech products can operate sustainably and generate high-level revenues (TechCrunch, 2025; Latka, 2025).

2.8 Key Metrics

Noteura tracks eight key metrics across product and business dimensions. Product metrics confirm the core learning experience is working; business metrics track financial sustainability.

The important note: a study session is defined as a minimum of 5 minutes of active app engagement that includes at least one completed learning activity: flashcard review set, quiz attempt or a summary read-through (see Table 5).

Table 5. Product Validation metrics

Metric	Type	What it measures	Target	Evidence & reasoning
Day-1 retention	Product	% of users who return the day	≥ 25%	Most cancellations happen on day zero. Day-1 return confirms the first session created enough value to come back. Industry

		after first session		average across all apps: ~25% Day-1 (Business of Apps, 2026)
Day-7 retention	Product	% of users still active on day 7 of trial	$\geq 13\%$	Day-7 is the last day of the free trial. Users who are still active on day 7 have built a basic habit and are most likely to convert to paid. Industry avg Day-7: 11-13% across all apps (Business of Apps, 2026).
Day-30 retention	Product	% of paying users active 30 days after subscribing	$\geq 20\%$	Education apps average 2% Day-30 retention across all users (Business of Apps, 2026). Among paying subscribers, the goal is to target 20% - a user who paid \$15 has demonstrated intent. Below 20% means even motivated users are not finding enough reason to return
Trial engagement rate	Product	Average number of study sessions completed during 7-day trial	≥ 3 sessions	No direct benchmark available for this metric, it is specific to Noteura's trial model. The decision to set 3 sessions as the minimum is relevant because a student who studies 3+ times during the trial has integrated the product into their routine before paying. Fewer than 2 sessions signals the product did not become habitual

Conversion rate (trial → paid)	Business	% of 7-day trial users who subscribe at \$15/month	$\geq 5\%$	Consumer AI platforms average ~3% free-to-paid conversion (RevenueCat, "State of Subscription Apps," 2025). Hard paywalls convert at 10.7% vs 2.1% for freemium by day 35 (RevenueCat, 2026). The target 5% is above the AI industry baseline, realistic given the full-access trial model
Churn rate	Business	% of paying users who cancel each month	$\leq 12.5\%$	AI-powered apps lose subscribers 30% faster than non-AI products (RevenueCat, 2026). The case assumes 8-month retention, implying 12.5% monthly churn (LTV and break-even calculations in Section 3.4).
LTV / CAC	Business	Ratio of a customer lifetime value to a customer acquisition cost	≥ 2.0	Based on the financial model in Section 3.4: LTV = \$120 (8 months × \$15), CAC = \$60. A ratio of 2.0 is a workable starting point for a product relying on organic channels, as TikTok content and referrals bring CAC down over time, this ratio improves without changing pricing or retention.
Refund rate	Business	% of paying users who request a refund	$< 4.86\%$	Education apps have a median refund rate of 4.86%, with AI apps at 4.2%, it is higher than non-AI products due to unmet expectations after purchase (RevenueCat, "State of Subscription Apps," 2025). The

				7-day free trial is the main tool for staying below this threshold.
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Source: Business of Apps. *Mobile App Retention Report*. 2026; RevenueCat. *State of Subscription Apps 2025*. 2025; RevenueCat. *State of Subscription Apps 2026*. 2026.

2.9 Unfair Advantage

At the initial stage, Noteura does not have a competitive advantage that cannot be copied. It is the technical basis - API integration, rule-based session setup, self-assessment of fatigue.

The real advantage of the product over time will be formed based on three aspects: the data that accumulates with each session, the habits that are formed during each semester, and the trust that grows with each student who begins to associate Noteura with learning without burnout. But with each month, the MVP can be filled with different aspects, in the form of AI memory coaches and learning maps

Five vectors of emerging competitive advantage

1. Proprietary interaction data

After each session, user behavior metrics will be analyzed and recorded in a database. This is designed to analyze performance patterns, fatigue, and provide appropriate workload levels. It is planned that data analysis will take place over a certain number of sessions to build logic and create a productive plan based on it. All this will include an assistant methodologist who will help the system build logic based on scientific research.

At the MVP stage, Memory Coach works according to a model based on rule-based logic, that is, a certain question has its answer without adaptation. Over time, it is planned that as information about

the user is received, the model will switch to adaptation for the user on Noteura's own database of students.

The research conducted and the research found confirm the hypothesis that adaptive learning increases learning outcomes. Thus, a meta-analysis of adaptive learning studies from 2010–2022 showed that students who used adaptive systems demonstrated a medium to large positive impact on cognitive learning outcomes ($g = 0.70$) compared to non-adaptive approaches (David Publisher).

3. Habit loop and retention advantage

After just 3 sessions, the user receives their own learning history and insights into what time they should spend on topics, their weaknesses, and which formats are more effective. This creates a link that makes people want to stay, as there is already a history and the user already knows everything they need about the tool. It is planned to implement such functions as "Session Summary" and "Weekly Learning Report" that are created based on contact with the user. A signal that the advantage is starting to form is the retention rate on the 30th day, which is above the average for the educational app category, which is 2% (Business of Apps).

4. Brand trust in the student area

Currently, most applications or platforms in the EdTech market are about note-taking, memory aids in the form of flashcards. In the case of Noteura, it is planned to add cognitive load management and burnout-free learning. The comparative table in section 2.10 confirms that currently none of the existing tools occupy this position - the line "fatigue adaptation" is empty for all competitors, especially when combined with other learning tools.

5. Institutional distribution

Partnerships with universities add the potential for long-term distribution, transforming Noteura from a product that students choose to download to a tool embedded in academic infrastructure. This is already in the post-MVP stage.

2.10 Competitive Analysis

To understand what place Noteura can occupy in the market and what competitors can stand in the way, all the tools that are more widely used on the market were analyzed. Three main groups were distinguished (see sector 2.10.1., 2.10.2., 2.10.3.) and distributed how closely their functions overlap with what is present in the Noteura project.

2.10.1 Group 1 — Note-Taking and Summarization Tools

This segment contains the largest number of products aimed specifically at structuring and creating outlines. These are the main competitors at the initial stage of product development, as Noteura's functionality will largely coincide with the functionality of these applications.

HyNote

HyNote is a product that combines a variety of tools. It supports text, image, and audio input with live transcription, generates structured summaries and FAQs, works on all major platforms, and supports over 100 languages. Among the nice touches are over 50 customizable templates, integration with Google and Notion, and encrypted cloud storage for those who value data privacy (HyNote).

An analysis of the application showed that there is one problem that is quite common with this product, namely hidden minute limits in the premium plan, which can only be found after paying for the subscription (App Store). The product also lacks adaptation to emotional state. The price starts at \$6.66 per month, and the main markets are the United States, France, and Canada.

Coconote

Coconote is a product that is mainly aimed at students. Here you can upload any content and the system will generate all the necessary notes, flashcards, tests, etc. Behind the product is a team of former engineers from Loom, which was acquired by Atlassian for \$975 million, in fact, unlike TurboAi, this product is created by really high-quality technicians (PR Newswire). The application is available on iOS, Android, Mac and a web version. The price is from \$9 to \$19.99 per month depending on the selected subscription, the main markets are the USA, Canada and the UK.

However, this product has certain limitations such as the lack of processing YouTube links and scanning images with the camera, although these are some of the most common usage scenarios among students (Voicememos.co). Second, flashcards are generated based on the general context of the lecture, rather than a specific learning objective, which often makes them less accurate than they could be (tl;dv). There is no adaptation to emotional state.

Turbo AI (formerly TurboLearn)

Turbo AI is a rather interesting product, created by two students who actually made it to overcome their own pain. The product adapts all types of materials into structured notes with additional visualizations in the form of diagrams or charts. There are also quizzes: flash cards and the ability to create podcasts on the necessary topic. The main feature of the product is its flexibility. The user can either completely trust the AI, or take notes in parallel with it. Additionally, the product works with STEM content - formulas, chemical equations and code fragments (Turbo AI).

One of the drawbacks is that the application itself cannot edit AI-generated notes, which is quite inconvenient (App Store). Also, it does not cover the issue of adaptability to the emotional state of the student. Price - \$19.99 per month, main markets - USA, Canada, and UK.

NotebookLM (Google)

NotebookLM is one of the most powerful tools in this category, built on Google's Gemini AI model. The product includes a fairly large list of different tools, from generating flashcards to reviewing

any materials loaded into it. Additionally, there is a Learning Guide mode, with which the user can step by step understand the material through open-ended questions. As of September 2025, it supported over 80 languages and by the end of the year had reached over 10 million students at over 1,000 US universities (Google Blog). This tool is free with the regular AI version, and costs \$19.99 per month with Google AI Pro.

Notera complements this product with its own adaptability and the fact that it remembers all previous sessions of the user, his experience in this or that topic, which helps to be in a learning mode constantly and understand the current state, rather than starting everything from the beginning in the dialogue every time (Academia.edu).

2.10.2 Group 2 — Active Learning and Flashcard Tools

Anki

Anki, a product with published results. The idea behind the product is that it displays flashcards at the exact moment a student is about to forget them. One study found that users who used the app consistently scored an average of 71.5% on exams compared to 60.0% for those who used it less (Winter et al). The downside of the app is that each flashcard has to be manually created, unlike its competitor Quizlet, described below. This is an additional burden that can cause users to abandon the app. Noteura solves this problem by automatically generating flashcards as content is loaded. The price of the web version of the product is free and \$24.99 for a one-time purchase on iOS (Anki).

Quizlet

Quizlet is a fairly popular app among students, one of the first associations that comes to mind when talking about a tool like “flash cards” (subjective opinion). The app includes a fairly large library of ready-made card sets and the app itself is quite easy to use. It is a fairly straightforward

passive tool aimed only at memorization without adaptation, structuring, and (Scholarly Blog). It is more of an auxiliary tool, but definitely not for reducing the load. The price is free, and the paid level is \$ 7.99 per month for Quizlet Plus.

2.10.3 Group 3 — Adaptive Learning Systems

This group is the least competitive and that is why the product is planned to enter this market in the long term

Khanmigo (Khan Academy)

Khanmigo is an artificial intelligence tutor from Khan Academy that answers students' questions on the topic of study, explains the concepts of a particular process, and can even adapt its answers in complexity to the actual level of the user. However, this AI assistant cannot use external materials and load training materials provided by teachers or other resources. There are only limitations to materials from the Khan Academy library. This tool is free for students.

Duolingo

Duolingo is an application used by millions and is quite adaptive in learning, it tracks errors, adjusts the difficulty based on them, and uses gamification to maintain daily motivation, although sometimes quite aggressive in the form of an angry application icon or rude push notifications. However, the consistency in the series and the rewards in the app keep users coming back and the rewards really work and keep users coming back. However, uploading your own materials is also not possible and this is an app mostly for language learning and does not scale for the more complex subjects taught in universities. The full feature comparison across all analyzed competitors is presented below (see Table 6).

Table 6. Competitive Feature Comparison

Feature	HyNote	Coconote	Turbo AI	Notebook LM	Anki	Quizlet	Noteura
Platform	iOS/Web	iOS/Android/Mac/Web	iOS/Android/Web	Web	Desktop/iOS/Android	Web/iOS/Android	Web (MVP)
PDF processing	+	+	+	+	-	-	+
YouTube processing	+	-	+	+	-	-	+
Auto flashcard generation	+	+	+	+	-	-	+
Spaced repetition	-	-	+/-	-	+	+/-	basic (MVP) / advanced (post-MVP)
Adaptation to	-	-	-	-	-	-	+

fatigue/stat e							
Session planning	-	-	-	-	-	-	+/- (post-MVP)
Podcasts from content	-	+	+	+	-	-	- (post-MVP)
Price/mont h	\$11.99	\$9–20	\$19.99	free / \$19.99	free	\$7.99	\$15

Source: Authors' own analysis based on publicly available product information (see Section 2.10).
AIChief, 2026; Coconote, 2025; TechCrunch, 2025; Google Blog, 2025; Anki, 2025; Sensor Tower, 2026.

Chapter 3. Financial Sustainability and Cost Structure Evaluation

3.1 Cost Estimation Approach

To estimate the costs required to develop and launch Noteura, a combined approach was used, based on three main sources of information.

First, an analysis of competitors, such as HyNote, Coconote, Turbo AI and NotebookLM, (see section 2.10). This analysis showed that the products are quite operationally sustainable and the operational costs are used from the revenue part.

Next, a typical cost structure for EdTech products with AI integration was considered. All products usually have large product development costs combined with operational costs, taking into account the possible further scaling of the product, through the use of APIs and cloud infrastructure. Products involving AI do not have fixed costs, but directly depend on the number of users and the load they put on the system. This gives an understanding that the cost model should include different scenarios.

The last thing considered was publicly available estimates of the development of MVP digital products in the field of educational technologies and AI tools. The full breakdown is presented in Table 7 in Section 3.2.

Taking all aspects into account, the assessment is aimed at minimizing the investment for the initial launch of a product that includes AI Memory Coach.

3.2 Development Cost Structure (MVP Model)

The bottom-up cost estimation method was used to estimate the costs (Project Management Institute 244). The method is one of the standard approaches to cost estimation. The method is based on decomposing the full scope of work into separate components, estimating the efforts required for each of them separately, and summing the results. This method gives us a more detailed estimate,

taking into account the fact that there is an AI Memory Coach product, which has no unique analogue on the market yet.

For each component in Table 7, a three-step process was followed:

Step 1 - determining the required scope of work that needs to be done at different stages, and how much time it will take.

Step 2 - estimating the number of hours for development and other aspects. To verify these estimates, publicly available benchmarks for SaaS products at the MVP stage with AI were used.

Step 3 - Hourly rates were applied based on current market data for developers from Eastern Europe, which is the best option for a Ukrainian startup product (subjective opinion). The analysis showed that the rate of developers from Eastern Europe in 2025–2026 ranges from 30 to 70 USD per hour depending on experience and specialization. The necessary specialists for the product, who are familiar with AI and backend, earn above the specified range (Index.dev; DistantJob; Qubit Labs).

Key assumptions and constraints:

Three limitations were found that could affect the cost of product development. The first is the integration of Noteura with existing AI models via OpenAI or Anthropic API queries, which reduces development time and costs the most. The second is that the MVP focuses only on the core functionality and AI Memory Coach, additional features will be created in future versions and are not included in this cost estimate. The third is that AI Memory Coach is a core feature and cannot be removed, even though its development may take up a large portion of the budget.

Table 7. Noteura Development Cost Estimate (MVP Model)

Expense Category	Description of Work	Est. Hours	Rate (USD/hr)	Est. Cost (USD)
Backend Development	Server-side logic, API development, database architecture	500 hrs	\$55	\$27,500
Frontend Development	User interface, user flow implementation	400 hrs	\$45	\$18,000
AI Integration	LLM API integration, processing logic	250 hrs	\$60	\$15,000
Content Processing Module	PDF parsing, video transcription	200 hrs	\$45	\$9,000
Flashcard Generation System	Automated flashcard creation	160 hrs	\$45	\$7,200
AI Memory Coach	Adaptive learning logic, behavioral analytics	300 hrs	\$65	\$19,500

UX/UI Design	Wireframes, design system development	240 hrs	\$45	\$10,800
DevOps and Infrastructure	Cloud setup, CI/CD, security configuration	200 hrs	\$45	\$9,000
Total		2,250 hrs		~\$116,000

Source: Authors' own estimates based on bottom-up estimation methodology. Hourly rates derived from Eastern European developer market benchmarks: Index.dev. "Freelance Developer Rates 2025." Index.dev, 2025; DistantJob. "Offshore Software Development Rates by Country." DistantJob, 15 Sept. 2025; Qubit Labs. "Guide to Offshore Software Development Rates by Country in 2026." Qubit Labs, 2026. Estimation method based on Project Management Institute. *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)*. 6th ed., Project Management Institute, 2017.

Commentary on key line items

The \$27,500 backend development is planned to include aspects such as server infrastructure, which accordingly includes such items as: user authentication, file storage and processing pipeline, API layer, database construction. The estimate of 500 hours reflects the complexity of building a multi-module SaaS backend capable of handling simultaneous file uploads, LLM API calls, and real-time user session data.

AI Memory Coach is expected to cost \$19,500, and this is just the development of adaptive logic and decision-making based on rules that will be embedded by a psychology expert based on

scientific research (see section 3.3). This is different from the overall backend infrastructure. The estimate of 300 hours reflects the complexity of designing, testing, and validating the adaptive rules in collaboration with a consultant.

The AI itself is estimated at \$15,000. The main cost is API requests that will be used to respond to user responses, namely, notes, flashcards, quizzes, etc. Frontend development costs \$18,000. This is all about visuals and a user-friendly, simple interface, from registration to the full cycle and use of all features.

Total Investment and Market Context

The total investment is approximately \$116,000, and this figure only represents an approximate development cost. Operating expenses are estimated separately in Section 3.3, and a full investment picture, including a break-even analysis, is presented in Section 3.4.

3.3 Monthly Operating Expenses

After the MVP version is launched, the costs will become operational and fixed. These direct costs will depend on the number of users and their requests. Below is a breakdown of each operating expense category.

Team and Personnel

At MVP stage, Noteura requires a team of five people. Based on Eastern European market rates from Section 3.2 (Index.dev; DistantJob):

- 1 Full-Stack Developer (maintenance, bug fixes, iterations) - \$3,000–\$4,000/month
- 1 AI/ML Engineer (LLM prompt optimization, API cost monitoring, model performance tracking) - \$3,500–\$4,500/month
- 1 Product Manager / Growth Lead (roadmap, marketing) - \$2,000–\$3,000/month
- 1 UX/UI Designer (full-time) - \$1,000–\$1,500/month

- 1 Educational Psychologist (full-time, cognitive load adaptation and Memory Coach logic validation) - \$1,500–\$2,500/month

Total personnel: ~\$11,000–\$15,500/month

The educational psychologist is planned to be a full-time employee during the development stages and subsequent stages of product support. The main responsibility is to adjust the AI Memory Coach model. At the rule-based logic stage, i.e., the creation of the product itself, the specialist will help to support the psychological foundation based on research and official data, for example, which behavioral signals indicate cognitive overload: or vice versa, it is also planned to set adaptation thresholds and ensure that the response of the system itself is based on correct scientific rules, and does not make mistakes, as artificial intelligence has been noticed more than once (Bridgehouse Company Secretaries). Currently, the average salary of a psychologist in Ukraine is 1750–2200 US dollars per month (SalaryExpert).

AI API Usage

This section requires a precise calculation to get an idea of scaling as the number of users grows. Noteura uses two models: GPT-4o for content processing and summarization (\$2.50/1M input tokens, \$10.00/1M output tokens) and GPT-4o mini for Memory Coach session logic (\$0.15/1M input tokens, \$0.60/1M output tokens) - about 16 times cheaper per token (OpenAI).

A typical user session is expected to include downloading a 10-page PDF (~6500 input tokens), creating a summary, 20 flashcards, and 10 quiz questions (~2000 output tokens), and one interaction with Memory Coach via GPT-4o mini (~800 tokens total). With 500 active users conducting 3 sessions per week (~6000 sessions/month), the total API costs are approximately \$300–\$500/month.

Cloud Infrastructure

Standard AWS or Google Cloud hosting for a SaaS product at the MVP stage costs between \$500 and \$1,500 per month for initial user volumes, scaling as the audience grows.

IT systems and subscriptions

This category is not in the initial estimate, \$350-500 is planned for communication with Clients, analytics, email.

Product maintenance and marketing

\$1000-\$2000 per month - quality assurance, security audits, contract work.

\$2000 per month - marketing expenses such as TikTok and Meta. Referral program.

The full breakdown of monthly operating expenses is presented below (see Table 8).

Table 8. Revised Monthly Operating Expenses

Expense Category	MVP Stage (~500 users)	Growth Stage (~5,000 users)
Personnel (5 core roles)	\$11,000 – \$15,500	\$15,500 – \$22,000
AI API Usage (GPT-4o + mini)	\$300 – \$500	\$2,500 – \$3,500
Cloud Infrastructure	\$500 – \$1,000	\$1,500 – \$2,500
IT Systems & Subscriptions	\$350 – \$500	\$500 – \$800
Product Maintenance	\$1,000 – \$2,000	\$1,500 – \$2,500
Marketing & User Acquisition	\$2,000	\$3,000 – \$5,000
Total Monthly Burn Rate	~\$15,500 – \$22,000	~\$22,000 – \$32,300

Source: Authors' own analysis based on OpenAI API Pricing (2025); AWS and Google Cloud public pricing data (2025); Eastern European developer market rates per Index.dev (2025), DistantJob (2025), and Qubit Labs (2026).

3.4 Quantitative Financial Model and Key Performance Indicators

The financial model below uses simplified assumptions intended to assess feasibility, not to create precise forecasts.

Parameters used:

- Subscription price: \$15/month (aligned with Section 2.6 pricing)
- Marketing budget: \$2,000/month
- Average CPL (Cost Per Lead): \$3
- Conversion trial-to-paid: 5%
- Average retention: 8 months
- Development investment: \$116,000 (revised per Section 3.2)
- Marketing investment (6 months): \$12,000
- Total initial investment: \$128,000

3.4.1 Customer Acquisition Cost (CAC)

Number of paying users per month = (Marketing budget / CPL) × Conversion rate = $(2,000 / 3) \times 5\% \approx 33$ users

CAC = Marketing budget / Paying users = $2,000 / 33 \approx \$60$

A CAC of \$60 means = 4 paid subscriptions worth \$15 per month.

3.4.2 Lifetime Value (LTV)

LTV = Subscription price × Average retention = $\$15 \times 8 = \120

3.4.3 LTV/CAC Ratio

LTV/CAC = $120 / 60 = 2.0$

A LTV/CAC ratio of 2.0 indicates that the unit economics are borderline but potentially viable for an early-stage product, especially if the company relies heavily on organic acquisition channels. The model returns 2 per dollar invested, which means a small product margin that is difficult to maintain at the expense of costs. The model definitely needs further refinement in the future.

Realistic ways to achieve this have been identified and will need to be explored:

- Reducing CAC with organic leads, which will help improve the ratio to 4.0–6.0 without changing pricing. For example, competitor Coconote achieved \$300,000 per month in revenue building only organic content (Growth Hacking Lab).
- It is possible to increase customer retention from 8 to 12 months. This increases LTV to \$180, resulting in an LTV/CAC ratio of 3.0 at the current CAC.

3.4.4 Break-Even Calculation

The break-even analysis is presented across three levels, as they measure different things and are frequently conflated in early-stage financial models

Level 1 - Breakeven Point

Number of users that will reach breakeven = Total investment / LTV = \$128,000 / \$120 $\approx$ 1067 users.

This metric tells us approximately how many users we need to cover our startup costs and marketing. This does not include monthly operating costs.

Level 2 - Operating Break-Even

This is how many more users we need each month to cover operating costs, from and to:

From: \$15,500 / \$15 = ~1033 active paid subscribers

To: \$22,000 / \$15 = ~1466 active paid subscribers

Level 3 - Cash Flow Breakeven

This metric should include absolutely all operating expenses, additional scaling costs, and various other necessary areas. Thus, it is estimated that this requires 2,000 users, which is planned to be achieved in phases 2-3 (see section 5.2)

Chapter 4. Student Learning Patterns and Educational Tool Preferences Survey

4.0 Survey Overview

The survey parameters are summarized below (see Table 9).

Table 9. Survey Overview

Parameter	Details
Purpose	To validate problem hypotheses related to cognitive overload, passive learning habits, and dissatisfaction with existing tools; and to explore willingness to pay for a learning support product
Date conducted	February 22, 2026
Sample size	n = 88 respondents
Distribution method	Email newsletter at Kyiv School of Economics (KSE) and direct messaging
Respondent profile	Primarily KSE students across bachelor's, master's, and PhD levels; also includes graduates and alumni from other Ukrainian universities reached through personal networks.

Source: Kyivska, O., Sushko, A. *Student Learning Patterns and Educational Tool Preferences Survey* [Unpublished raw data]. Kyiv School of Economics, Feb. 22, 2026.

Limitations: The data was gathered from an institutional email newsletter at KSE and personal network outreach to alumni and graduates of other Ukrainian universities, leading to self-selection bias and restricted applicability. These findings are not a perfect reflection of all students, therefore, they should be viewed as preliminary trends rather than definitive statistics. Furthermore,

participants are from Ukraine, the pricing data is not valid for the US market due to differing economic conditions. US pricing strategies are instead derived from competitor analysis (see Section 2.6).

4.1 Analysis of Student Stress Levels and Cognitive Load

Raw findings:

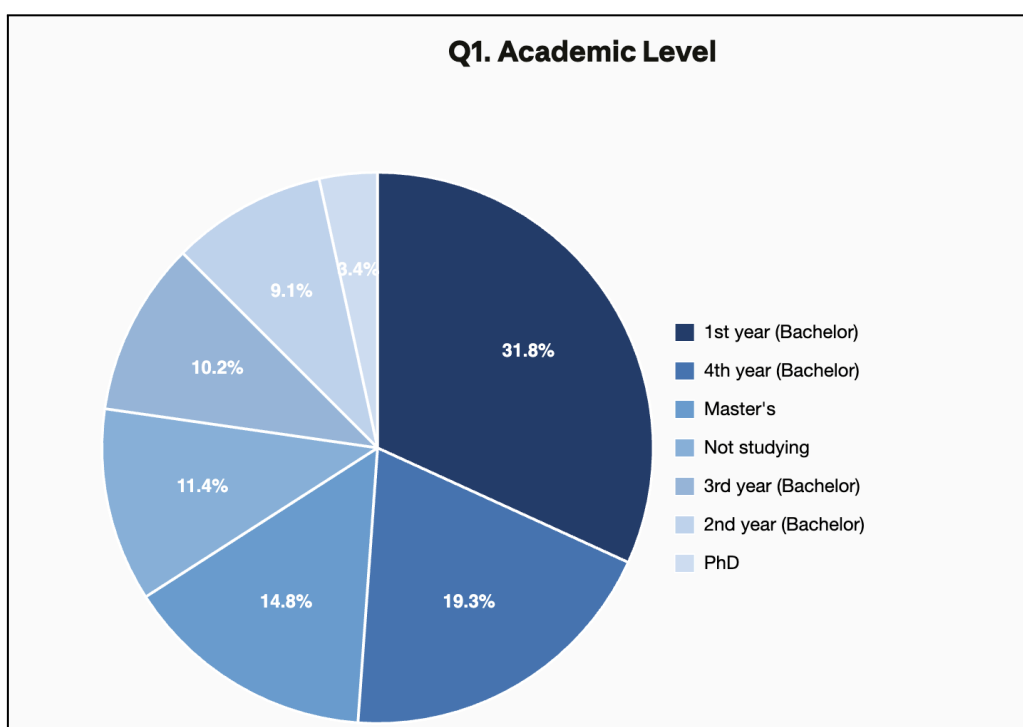


Fig. 2. Q1. Academic level distribution among survey respondents; Kyivska, Olha, and Anastasiia Sushko. Student Learning Patterns and Educational Tool Preferences Survey. Unpublished raw data. Kyiv School of Economics, 22 Feb. 2026.

The sample is distributed across academic levels as follows: 1st-year bachelor's students make up the largest group of 28 respondents, the second-largest group consists of 4th-year students - 17 participants, master's students - 13, respondents no longer studying - 10, 3rd-year bachelor's consist of 9 people, 2nd-year bachelor's - 8 participants, and the smallest group of 3 PhD students.

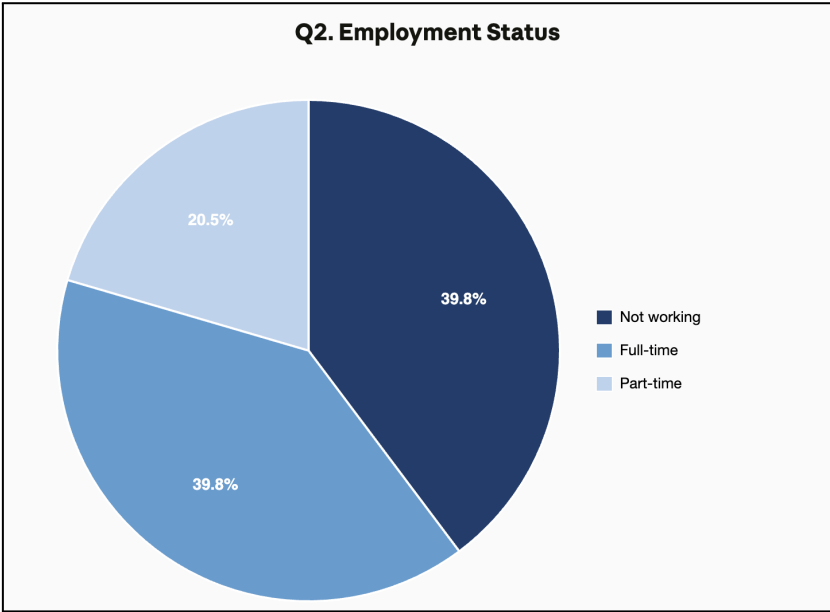


Fig. 3. Q2. Employment status of survey respondents; Kyivska, Olha, and Anastasiia Sushko. Student Learning Patterns and Educational Tool Preferences Survey. Unpublished raw data. Kyiv School of Economics, 22 Feb. 2026.

Employment status: 35 respondents (39.8%) are not working, 35 (39.8%) work full-time, and 18 (20.5%) work part-time.

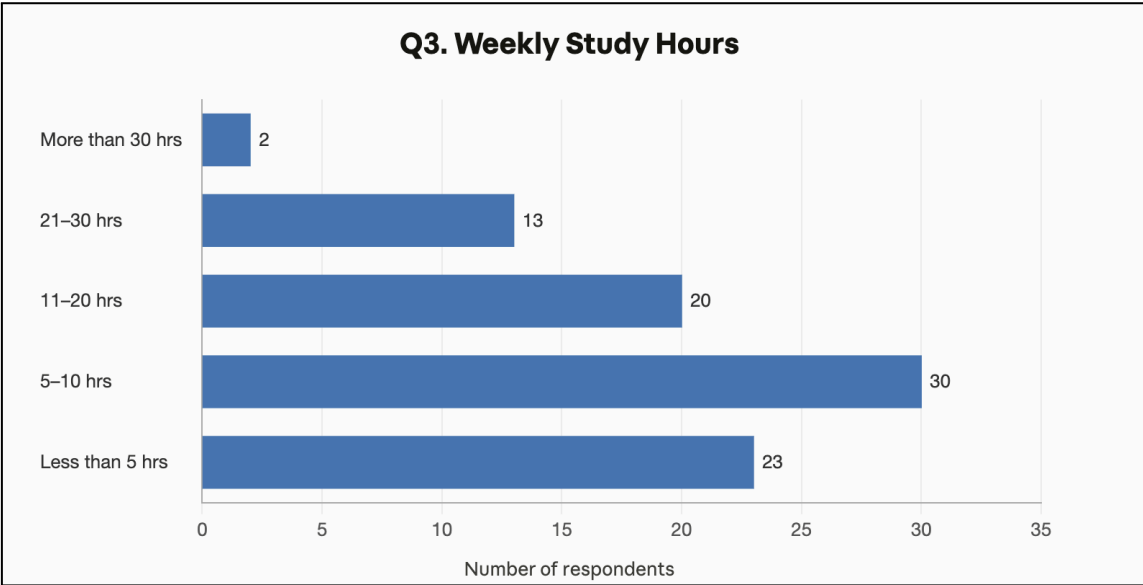


Fig. 4. Q3. Weekly study hours among survey respondents; Kyivska, Olha, and Anastasiia Sushko. Student Learning Patterns and Educational Tool Preferences Survey. Unpublished raw data. Kyiv School of Economics, 22 Feb. 2026.

Weekly study hours: the largest group studies 5-10 hours per week, there are 30 respondents, or 34.1%, followed by under 5 hours (23, or 26.1%), 11-20 hours (20, 22.7%), 21-30 hours (13, 14.8%), and over 30 hours (2, 2.3%).

Moving to the data from Q4, it shows that 40 respondents (45.5%) feel overloaded frequently, 29 (33.0%) sometimes, 9 (10.2%) very frequently, 8 (9.1%) rarely, and 2 (2.3%) never. Overall, 49 respondents (55.7%) feel overloaded most of the time.

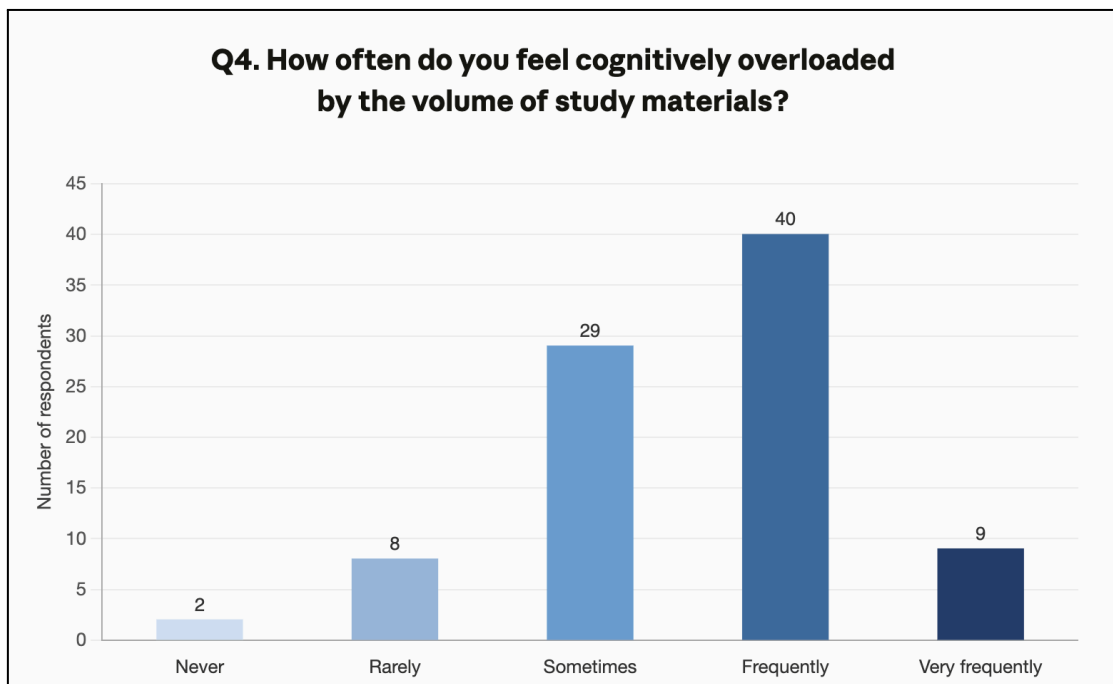


Fig. 5. Q4. How often do you feel cognitively overloaded by the volume of study materials?; Kyivska, Olha, and Anastasiia Sushko. Student Learning Patterns and Educational Tool Preferences Survey. Unpublished raw data. Kyiv School of Economics, 22 Feb. 2026.

The survey included a question 5 about how hard it is to start learning new material when there is no clear structure. Out of 88 respondents, 61 (69.3%) said yes and agreed with this statement. 26 respondents (29.5%) have answered “no”. One person chose to refrain from answering.

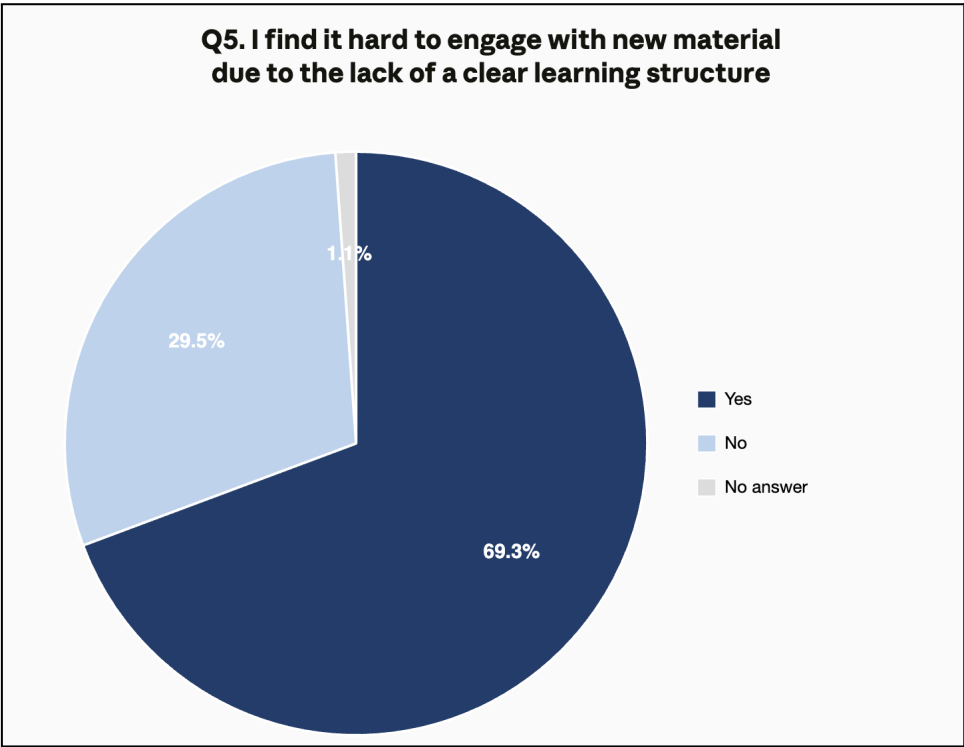


Fig. 6. Q5. Structural barriers to engaging with new material due to lack of clear learning structure; Kyivska, Olha, and Anastasiia Sushko. Student Learning Patterns and Educational Tool Preferences Survey. Unpublished raw data. Kyiv School of Economics, 22 Feb. 2026.

Peak stress moments (Q6) (see Table 10):

Table 10. Peak stress moment

Stress trigger	Respondents	% of sample
Exam preparation and testing	35	39.8%
During exams and assessment	26	29.5%
Starting new material	17	19.3%
During active learning	8	9.1%
After receiving results	2	2.3%

Source: Kyivska, O., Sushko, A. Student Learning Patterns and Educational Tool Preferences Survey [Unpublished raw data]. Kyiv School of Economics, February 22, 2026.

The data shows that most stress happens around exams, before (39.8%) and during (29.5%) them. Together, these two points cover around 70% of all responses. Starting new material is also a common stress point for about 1 in 5 students. Stress during active learning and after getting results is much less common.

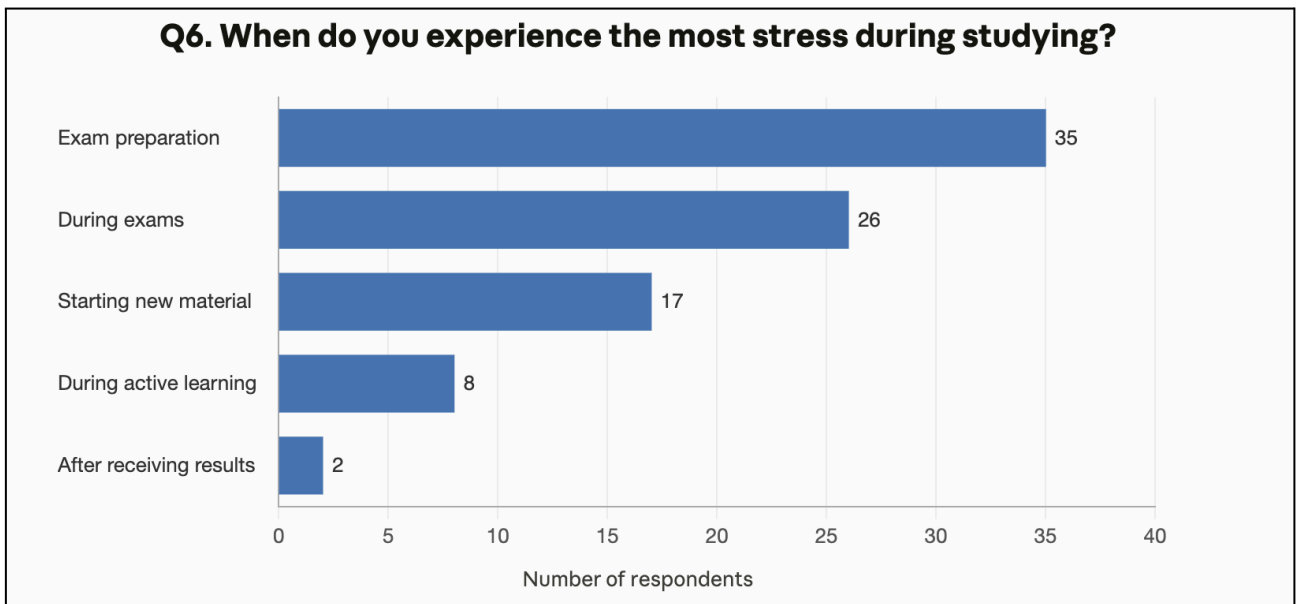


Fig. 7. Q6. Peak stress moments during studying among survey respondents; Kyivska, Olha, and Anastasiia Sushko. Student Learning Patterns and Educational Tool Preferences Survey. Unpublished raw data. Kyiv School of Economics, 22 Feb. 2026.

Interpretation:

The survey shows that most stress happens around exams and tests, not during everyday studying. Research also confirms that just planning how to study takes a lot of mental energy, which makes the total load even heavier (Sweller 261–262). The fact that 69.3% of respondents agreed with the

structural barrier statement supports this idea. However, because the sample is not large, these results should be considered as a first sign of a trend.

4.2 Evaluation of Study Methodologies and Retention Gaps

Raw findings:

The most frequently used study methods (Q7, multi-select) (see Table 11):

Table 11. The most frequently used study methods

Method	Count
Note-taking and summarization	66
Re-reading material	58
Practice tests and self-testing	55
Text highlighting	37
Spaced repetition	25
Flashcards	17

Source: Kyivska, O., Sushko, A. Student Learning Patterns and Educational Tool Preferences Survey [Unpublished raw data]. Kyiv School of Economics, February 22, 2026.

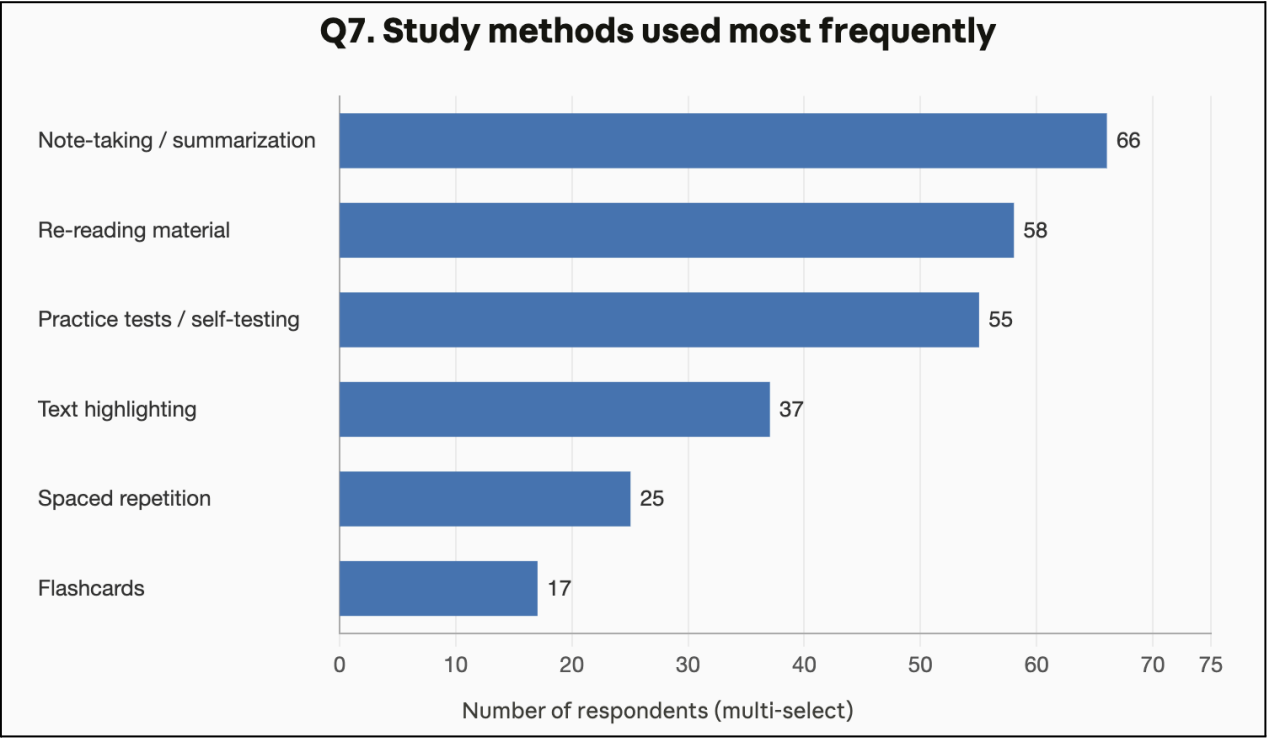


Fig. 8. Q7. Study methods used most frequently among survey respondents; Kyivska, Olha, and Anastasiia Sushko. Student Learning Patterns and Educational Tool Preferences Survey. Unpublished raw data. Kyiv School of Economics, 22 Feb. 2026.

Types of digital tools currently used (Q12, multi-select) (see Table 12):

Table 12. Types of digital tools currently used

Tool type	Count
AI summarization tools	55
Note-taking apps	50
Flashcard apps	22
AI note-taking assistants	23
Educational platforms (e.g. Coursera)	22

Source: Kyivska, O., Sushko, A. Student Learning Patterns and Educational Tool Preferences Survey [Unpublished raw data]. Kyiv School of Economics, February 22, 2026.

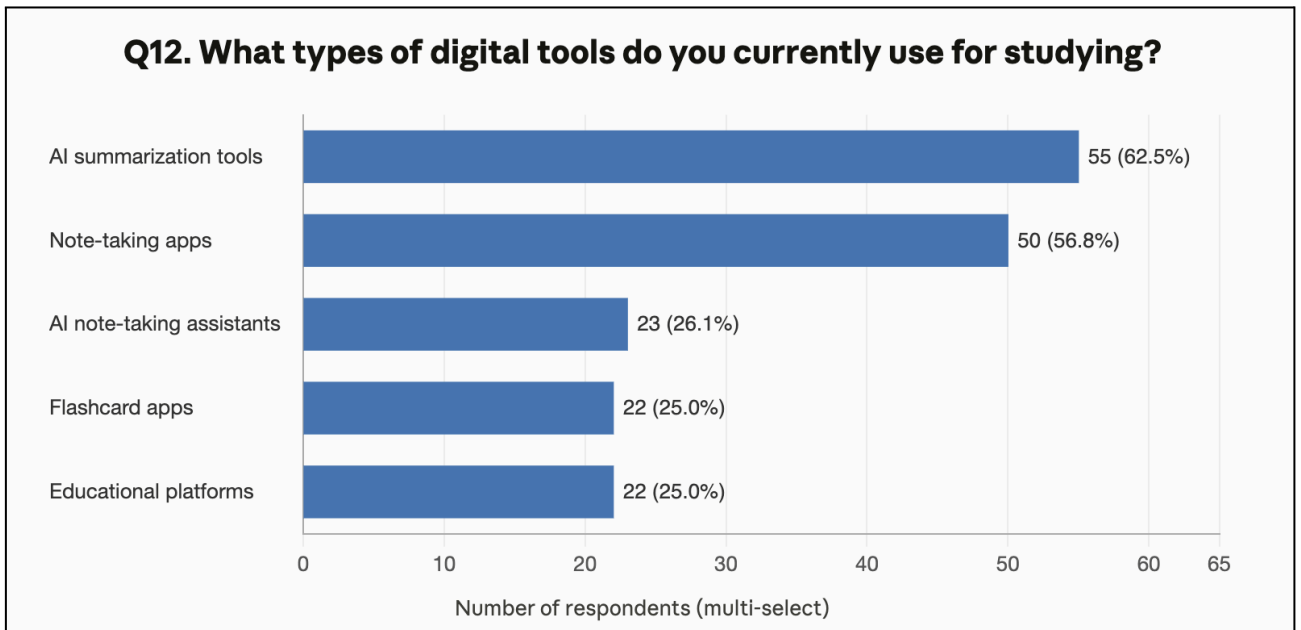


Fig. 9. Q12. Types of digital tools currently used for studying; Kyivska, Olha, and Anastasiia Sushko. Student Learning Patterns and Educational Tool Preferences Survey. Unpublished raw data. Kyiv School of Economics, 22 Feb. 2026.

Among all participants AI summarization tools (62.5%) and note-taking apps (56.8%) are the most popular. AI note-taking assistants, flashcard apps and educational platforms are used by about 1 in 4 students. This shows that students already use AI tools a lot, but mostly for passive tasks like summarizing material, not for active learning approaches.

Confidence in memorization (Q8):

- "Rather confident": 37 respondents (42.0%)
- "Neutral": 28 respondents (31.8%)
- "Rather unconfident": 16 respondents (18.2%)
- "Very confident": 5 respondents (5.7%)
- "Very unconfident": 2 respondents (2.3%)

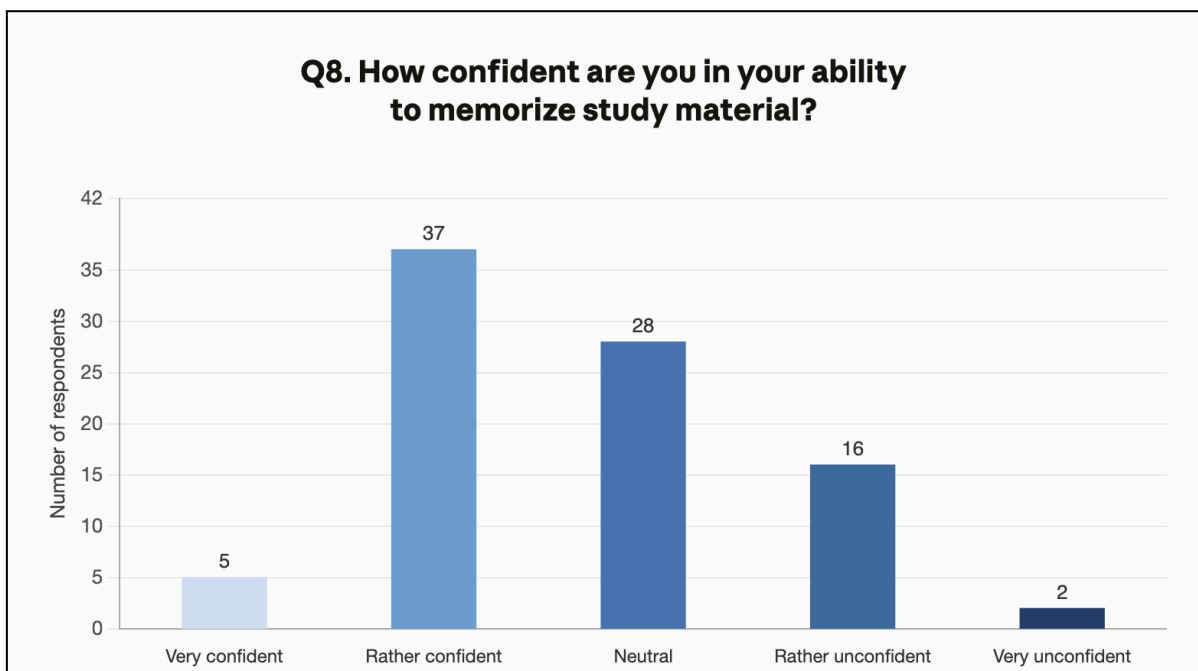


Fig. 10. Q8. Respondents' confidence in their ability to memorize study material; Kyivska, Olha, and Anastasiia Sushko. Student Learning Patterns and Educational Tool Preferences Survey. Unpublished raw data. Kyiv School of Economics, 22 Feb. 2026.

Actual retention after two weeks (Q9) - one respondent skipped the question:

- "Approximately half": 43 respondents (48.9%)
- "More than half": 17 respondents (19.3%)
- "Less than half": 17 respondents (19.3%)
- "Very little": 5 respondents (5.7%)
- "Almost everything": 5 respondents (5.7%)
- Refrain from answering: 1 respondent (1.1%)

Combined, 65 respondents (73.9%) report retaining approximately half or less of studied material after two weeks.

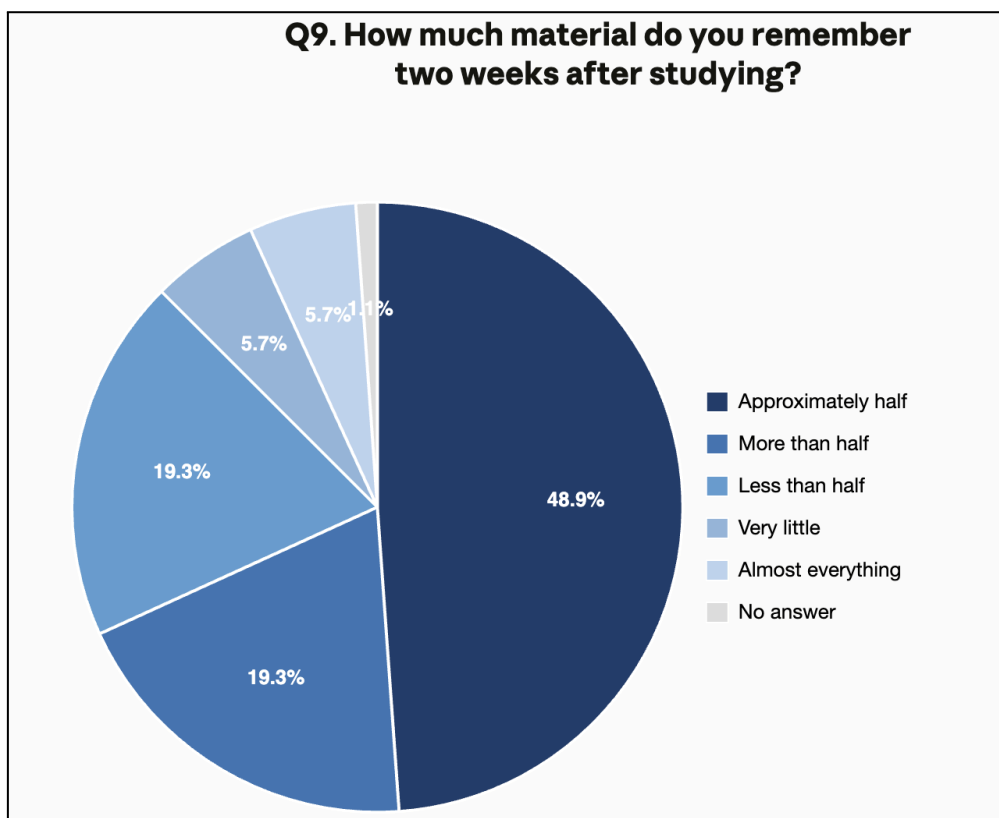


Fig. 11. Q9. Amount of material retained two weeks after studying; Kyivska, Olha, and Anastasiia Sushko. Student Learning Patterns and Educational Tool Preferences Survey. Unpublished raw data. Kyiv School of Economics, 22 Feb. 2026.

Current digital tool usage (Q11):

- Using regularly: 38 respondents (43.2%)
- Using occasionally: 30 respondents (34.1%)
- Tried but stopped: 10 respondents (11.4%)
- Never used: 10 respondents (11.4%)

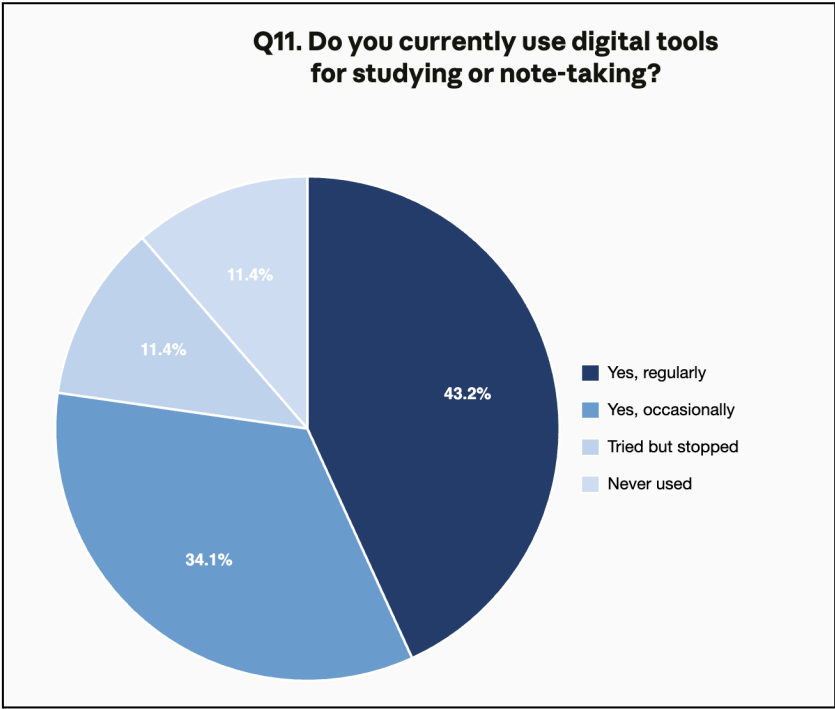


Fig. 12. Q11. Current use of digital tools for studying or note-taking; Kyivska, Olha, and Anastasiia Sushko. Student Learning Patterns and Educational Tool Preferences Survey. Unpublished raw data. Kyiv School of Economics, 22 Feb. 2026.

What respondents feel is missing from current tools (Q13, multi-select) (see Table 13):

Table 13. What is missing from your current learning tools?

Missing feature	Count
Personalization to learning pace	47
Feedback on what was actually retained	43
Clear structure and study recommendations	42
Progress tracking	38
Emotional support	33

Source: Kyivska, O., Sushko, A. Student Learning Patterns and Educational Tool Preferences Survey [Unpublished raw data]. Kyiv School of Economics, February 22, 2026.

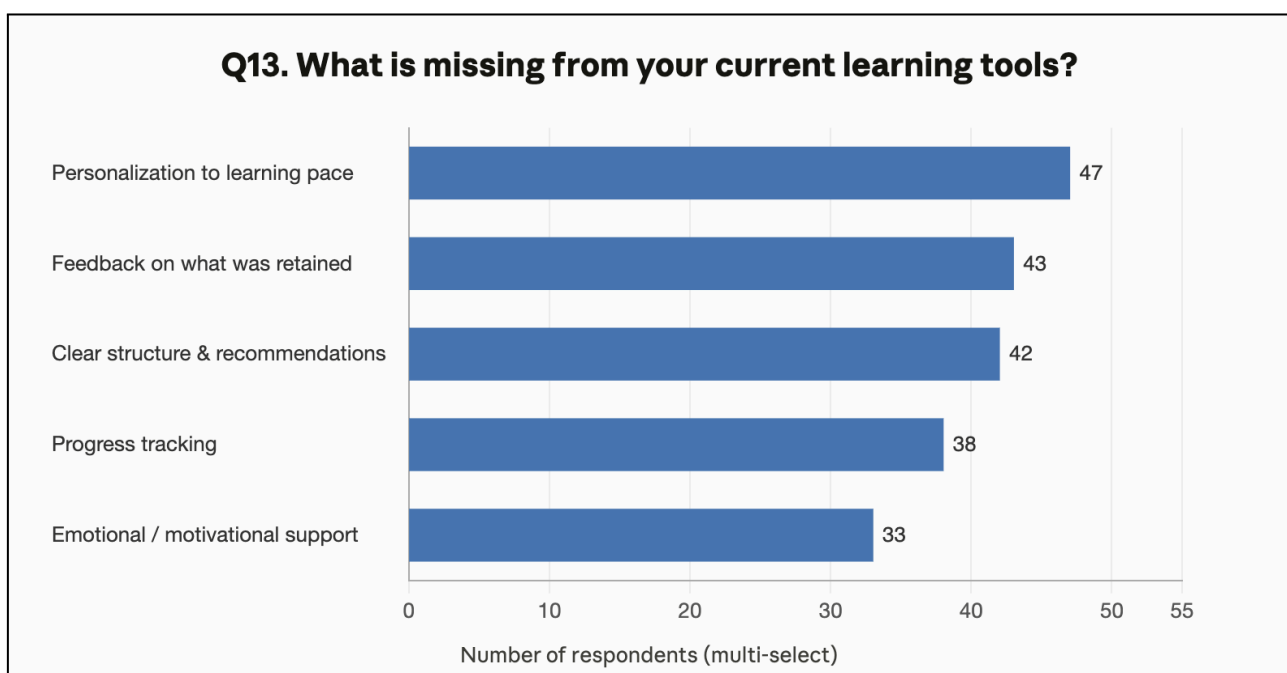


Fig. 13. Q13. Features missing from current learning tools as reported by respondents; Kyivska, Olha, and Anastasiia Sushko. Student Learning Patterns and Educational Tool Preferences Survey. Unpublished raw data. Kyiv School of Economics, 22 Feb. 2026.

Interpretation:

The Q12 response shows that AI summarization tools (55) and note-taking apps (50) are the most popular tool categories. This matches the competitive landscape described in Section 2.10, where tools like Notion, ChatGPT and NotebookLM dominate current student usage. However, flashcard apps (22) and AI note-taking assistants (23) are used much less, suggesting that active recall tools are still not common among this sample.

The gap between reported confidence and actual retention may show a pattern consistent with the "illusion of competence" described in cognitive psychology research, where passive study methods create a false sense of mastery, but does not reflect a long-term recall (Roediger and Karpicke 253).

Note-taking and re-reading are the most used methods despite being among the least effective for long-term retention. The fact that 73.9% of respondents retain about half or less after two weeks is consistent with the Ebbinghaus forgetting curve (Ebbinghaus 77).

The Q13 data shows the most requested improvements. There are personalization (47), retention feedback (43), clear structure (42), emotional support (33), and progress tracking (38) that match the core features of Noteura's proposed solution. This can be considered as support for the product direction.

4.3 Barriers to Adopting Active Learning Techniques

Raw findings:

Respondents were asked what most commonly prevents them from using active learning methods such as self-testing (Q10) (see Table 14):

Table 14. What prevents you from using Active Learning methods?

Barrier	Count
Require too much effort	39
Don't know how to use them correctly	23
Don't have the right tools	11
Don't see value in them	5
Cause too much stress	5
Refrain from answering	5

Source: Kyivska, O., Sushko, A. Student Learning Patterns and Educational Tool Preferences Survey [Unpublished raw data]. Kyiv School of Economics, February 22, 2026.

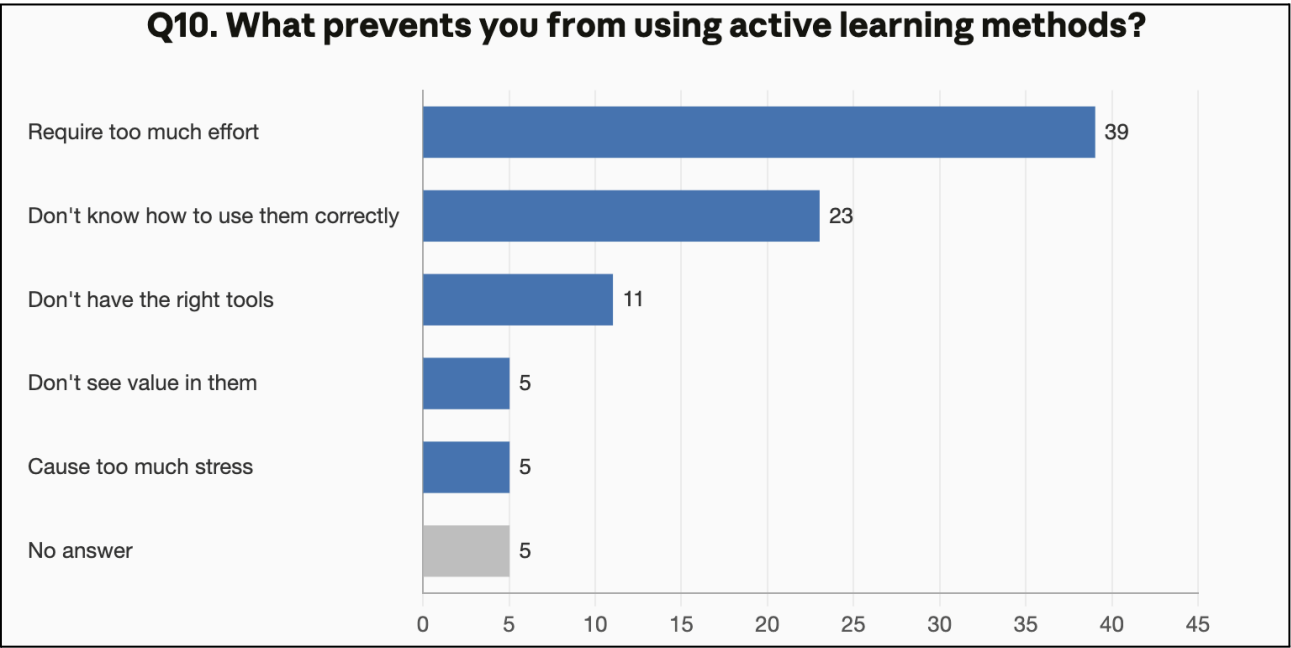


Fig. 14. Q10. Primary barriers to adopting active learning methods; Kyivska, Olha, and Anastasiia Sushko. Student Learning Patterns and Educational Tool Preferences Survey. Unpublished raw data. Kyiv School of Economics, 22 Feb. 2026.

Interpretation:

The most common barrier "requires too much effort" (39 responses) suggests that students avoid active learning not due to lack of awareness, but because it takes too much time to set up. Tools that create study materials automatically could help solve this problem. The second barrier "do not know how to use them correctly" (23 responses) shows that simple onboarding could help students start using active learning methods.

4.4 Pricing and Willingness to Pay

Raw findings:

Willingness to pay for a tool that improves retention and reduces stress (Q14):

- "Rather yes": 42 respondents (47.7%)
- "Hard to say": 17 respondents (19.3%)
- "Definitely yes": 12 respondents (13.6%)
- "Rather no": 11 respondents (12.5%)
- "Definitely no": 6 respondents (6.8%)

Combined positive intent: 54 respondents (61.4%)

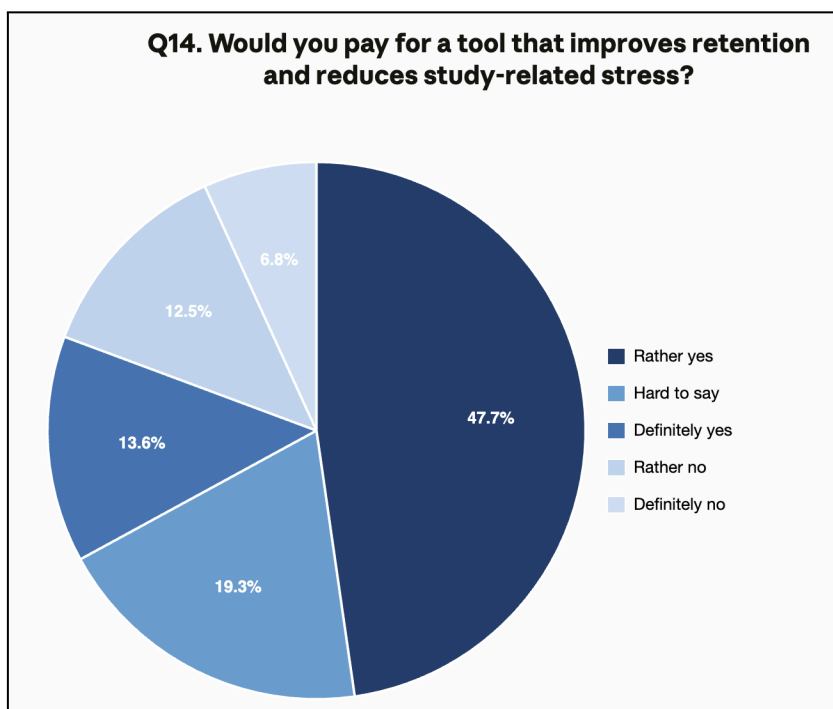


Fig. 15. Q14. Respondents' willingness to pay for a tool that improves retention and reduces study-related stress; Kyivska, Olha, and Anastasiia Sushko. Student Learning Patterns and Educational Tool Preferences Survey. Unpublished raw data. Kyiv School of Economics, 22 Feb. 2026.

Acceptable monthly price range (Q15):

- Up to \$5: 41 respondents (46.6%)
- \$6–10: 27 respondents (30.7%)
- Free only: 15 respondents (17.0%)

- \$11-20: 4 respondents (4.5%)
- More than \$20: 1 respondent (1.1%)

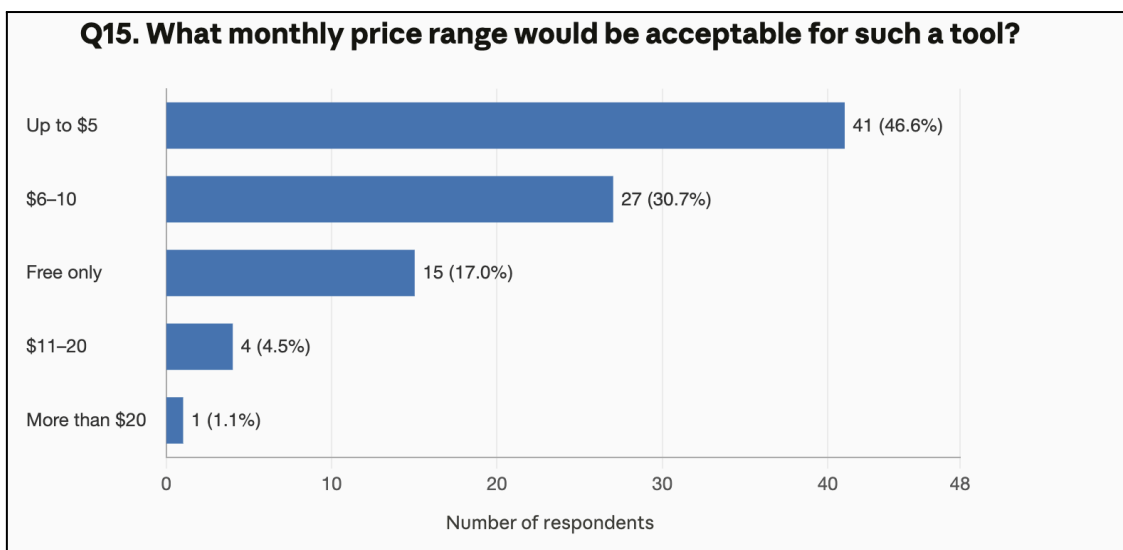


Fig. 16. Q15. Acceptable monthly price range for a learning support tool among survey respondents; Kyivska, Olha, and Anastasiia Sushko. Student Learning Patterns and Educational Tool Preferences Survey. Unpublished raw data. Kyiv School of Economics, 22 Feb. 2026.

Interpretation:

About 61.4% of respondents are willing to pay for a tool like Noteura. However, this number comes from a small sample and does not represent the whole market. Price sensitivity is high: 46.6% of students would pay up to \$5, and 17.0% want a free option only. As noted in Section 2.6, these numbers reflect Ukrainian purchasing power and cannot be used for US market pricing, where competitors charge \$9.99-\$19.99 per month. The fact that most students prefer the lowest price point supports the decision to offer a 7-day free trial instead of a permanent free tier.

Chapter 5. Implementation Roadmap

The product launch plan is outlined below. The implementation period is one year, or 12 months, and is divided into three phases. Each phase will have specific objectives, and the results the team must achieve to successfully complete the phase will be clearly defined.

5.1 Phase 1: Product Development (Months 1–3)

Goal: Develop a working product and test it with real users.

Process: It is planned to spend approximately 2250 hours over 3 months for this period. This is approximately our team of 5 specialists who will work full time. During this period, the team of developers, designers and psychologist will develop the web version. Over these three months, the core web application will be developed. Users will be able to open the site, upload all necessary files or links, and as a result receive a ready-made summary, a set of flashcards, and, if necessary, take several versions of the test. Also at this stage, the creation of a basic version of AI Memory Coach is planned - the main task for this feature at this stage will be to monitor fatigue levels by tracking user responses during a session, in order to adapt the presentation of material to the user's condition. Typically, the payment infrastructure is set up from the very beginning, so the product is ready to charge users immediately upon launch, but at this stage a 7-day free trial will be launched so that users can fully evaluate the functionality, experience the changes in the learning approach firsthand, and assess their retention levels using this specific method.

In addition, it is initially planned to recruit a test group of 3rd and 4th year students who are already working on closed beta testing – a group of approximately 20 people. With their help, the product will be tested to identify weaknesses and errors so that they can be quickly corrected. The end result of this stage is when this test group completes the session from start to finish without any major errors.

5.2 Phase 2: Launch (Months 4–6)

Goal: Acquire the first 75-100 paying users and identify free channels for product development.

With the help of a test group, the product is made publicly available at this stage. Broader product functionality is gradually added, such as a personalized roadmap for each student showing their current level, which topics they need to improve on, and providing additional tests as needed.

The targets for Phase 2 are outlined below (see Table 15). The plan is to start by leveraging free channels - Telegram groups - through genuine engagement and communication with the audience, rather than promotional posts. Next, to attract even more users, original creative content will be created for TikTok and Instagram, posting three times a week. These posts will have a hook, and the videos will demonstrate how the product actually makes students' lives easier. Towards the end of this phase, it is planned to launch a referral program to attract an even larger audience, where both the user who referred someone and the person who joined will receive a 50% discount for the following month. Most likely, by the end of this phase, a professional marketer will have been hired to take over this area of responsibility and attract an even larger audience through paid marketing channels such as Meta Ads, TikTok Ads, etc.

Table 15. Phase 2 Targets (projections based on Section 3.4)

Metric	Target
Trial starts	1500-2000+
Conversion trial-to-paid	5%
Paying subscribers by Month 6	75–100
MRR by Month 6	\$1,125–\$1,500

Source: Authors' own projections based on financial model outlined in Section 3.4; conversion rate benchmark per Arcade.dev (2025).

The milestone for this phase will be reached when the product has at least 75 users: those who have purchased a subscription and at least one piece of organic content has garnered over 10,000 views.

5.3 Phase 3 — Growth (Months 7–12)

The goal is to have 500 paying subscribers and ensure that users continue using the product long-term, rather than just for a month - typically only during exam preparation. The targets for Phase 3 are outlined below (see Table 16).

At this stage, plan to add additional features. First, a weekly report that will show the student, based on the previous two weeks, when it's best for them to study (day and time), which formats are most effective for them, and what stage the student is currently at. This can help increase user engagement over a longer period by providing value throughout the entire study period. Another additional option is study planning based on deadlines specified by the student. For example, the user sets an exam date, and the platform automatically breaks down the material into periodic sessions (here, sessions are offered as both daily and individual, with varying amounts of material chosen by the student) and also continuously adjusts the plan after each session based on results.

At the beginning of this phase, paid advertising channels are introduced on well-known platforms, but only after the effectiveness of the organic funnel has been confirmed. The initial budget ranges from \$1,000 to \$2,000 per month, depending on the number of users at this stage. In parallel, informal engagement with university student organizations and faculty is planned, which helps build relationships that may result in contracts with universities in subsequent phases.

Table 16. Phase 3 Targets (projections based on Section 3.4)

Metric	Months 7–9	Months 10–12
Paying subscribers	150–250	400–500
MRR	\$2,250–\$3,750	\$6,000–\$7,500

Monthly burn rate	~\$17,500–\$19,500	~\$18,500–\$21,500
LTV/CAC	2.5–3.0	3.0+
Churn rate	below 10%/month	below 8%/month

Source: Authors' own projections based on financial model outlined in Section 3.4; churn rate benchmarks per RevenueCat, *State of Subscription Apps 2026*, 2026

The goals of this year's plan will be considered achieved if the product has 400–500 users, an MRR of \$6,000–\$7,500, and data indicating that students continue their subscriptions throughout the entire academic year.

5.4 Risks

Every launch plan has both strengths and weaknesses. This product is no exception; below are the areas where Noteura may face setbacks. The risk analysis is based on the assumption that the product will be launched in USA.

5.4.1 User Retention Risk

For the most part, students use such products during the academic year, especially during exam season. If Noteura becomes a tool used only for intensive study rather than a constant habit for students throughout their studies, the assumption of 8-month user retention underlying the LTV calculation (see Section 3.4) will not hold true.

5.4.2 Conversion Risk

The financial model indicates a 5% conversion rate from the trial version to the paid version (see Section 3.4). In practice, achieving this rate is quite difficult, given the nature of this product and its highly competitive market environment.

5.4.3 AI Costs

As the number of people using AI grows daily, the prices for API queries will also increase, resulting in higher product costs.

Chapter 6. Conclusion

The work represents a journey from Ed Tech's market analysis to the creation of the Noteura product. Specifically, it is a web platform with AI integration, designed to simplify the lives of working students through tailored learning. The platform itself allows the upload of data in any format, from YouTube links to PDF files and voice recordings, which, using AI, are transformed in a couple of minutes into structured content with additional features like flashcards and emotional coaching using AI memory coach. A study of publicly available resources revealed that the problem the product is intended to solve does exist: problems with memorization, overload, and a lack of structure in the materials.

A survey was also conducted among students at the Kyiv School of Economics and other educational institutions, the primary target audience being third- and fourth-year undergraduate and graduate students. The research and survey supported the hypotheses presented in this paper. EdTech already offers a variety of products that can address the above-mentioned issues, but unfortunately, the market has yet to offer a product that combines adaptive learning based on emotional state and tools for creating notes, tests, and flashcards. This is precisely the niche that Noteura aims to fill.

A financial analysis showed that the product is ready for market entry, as there are already a sufficient number of competitors, each with a sufficient annual revenue to allow for a moderately difficult entry into the niche and a sufficiently funded exit. Over the product's lifespan, approximately 1,070 paying users are needed to recover the initial investment (Level 1 breakeven), while cash flow breakeven requires approximately 2,000 active paying subscribers (see Section 3.4.4).

All financial calculations are provided in the relevant section (see Section 3). At this stage, the work is estimated and hypothetical and awaits implementation, after which key figures may change.

The result of this work is the development of a startup concept with potential subsequent

refinements. The final goal of this work is the product's implementation, with the completed stages outlined in the road map (see Section 5).

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