Summer report

DIGITAL ECOSYSTEM DIGEST

2025

INTEGRATING GENERATIVE AI INTO LEARNING AND TEACHING – A UNIVERSITY-LEVEL SPOTLIGHT FROM GEORGIA

BTU BUSINESS & TECHNOLOGY UNIVERSITY

INTRODUCTION

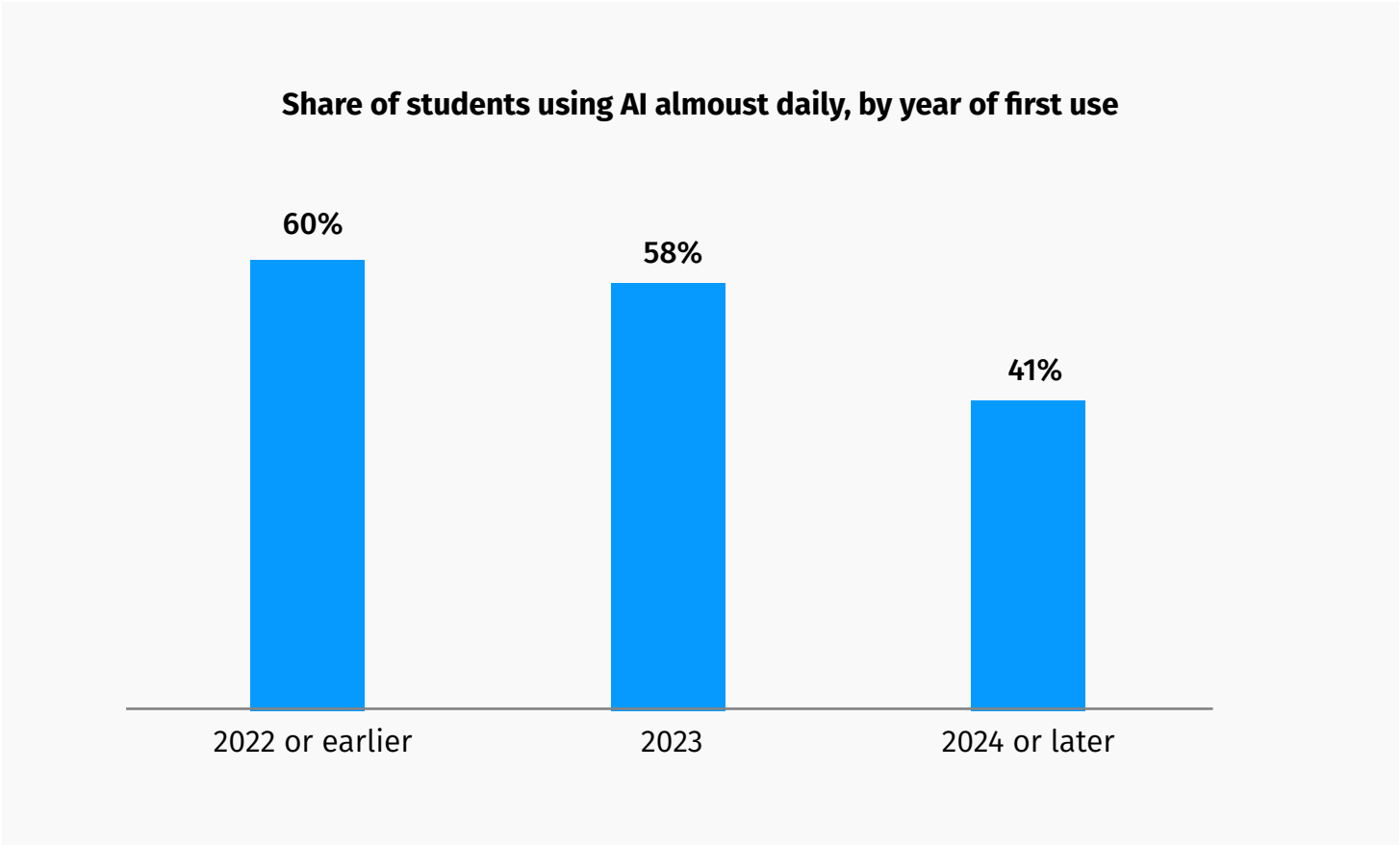
This research focuses on the rapid integration of generative AI in higher education in Georgia, particularly how it is reshaping both learning and teaching practices. The study is built around two main research components.

First, a quantitative survey was conducted within Business and Technology University (BTU) during June–July 2025, reaching 167 students (BA & MA) from programs such as finance, management, digital marketing, and IT. The survey consisted of 15 open and closed questions aimed at exploring behaviors, trends, and attitudes toward AI use. It is important to note that the findings are not representative of the entire student population in Georgia; instead, the aim is to reveal emerging patterns that may be valuable for education policymakers, administrators, researchers and practitioners. Also, since the sample comes from selected disciplines, some challenges or opportunities in other fields may not be reflected.

Second, the report presents an overview of how lecturers in Georgia are using generative AI, gathered through surveys, interviews, meetings, and informal exchanges. It highlights barriers and innovative teaching practices with recommendations and opportunities for future integration of AI into academic work.

STUDENT BEHAVIORS AND TRENDS IN AI USE

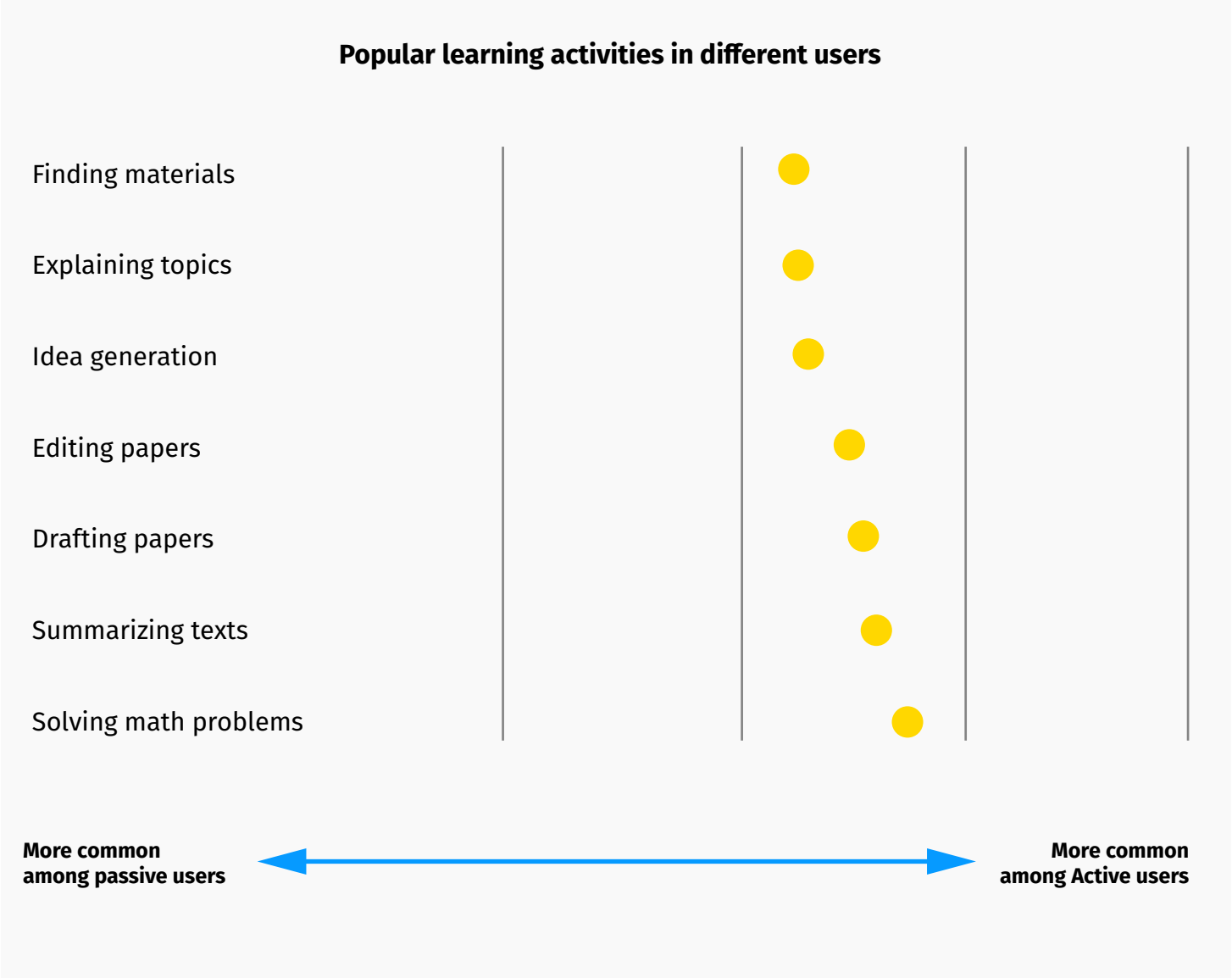
Students Who Started Using AI Earlier Are More Likely to Use It almost Daily



Among students who started using generative AI earlier, a higher share report using it almost daily for learning purposes. There is a weak but statistically significant correlation between the year respondents began using generative AI for learning and how frequently they use it now. The Spearman correlation coefficient is 0.19 with a p-value of 0.015.

STUDENT BEHAVIORS AND TRENDS IN AI USE

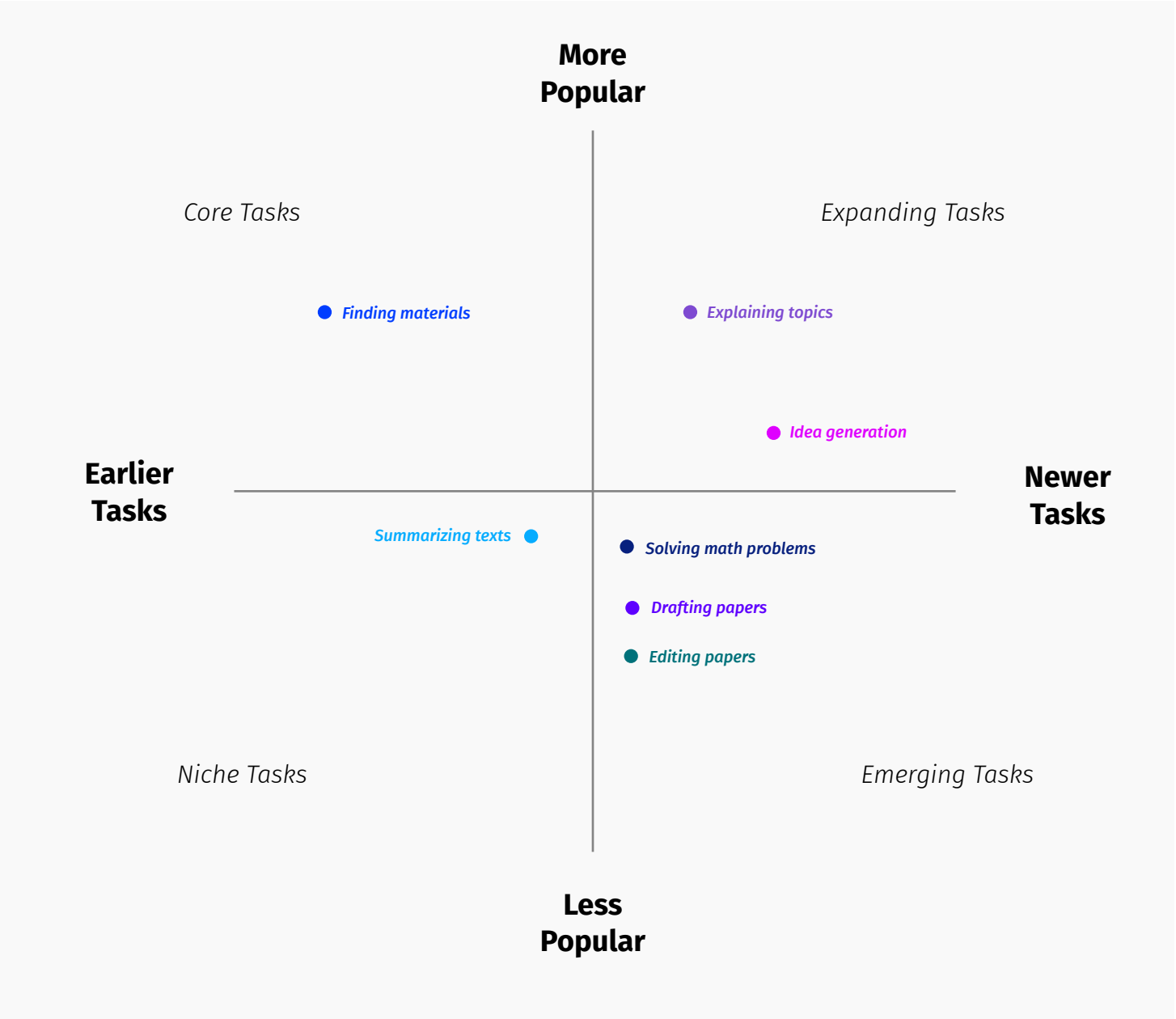
While Easy Tasks Are Common for All Students, Active Users Go Further with AI



The most common ways students use AI for learning are to **find materials and explain topics.** All activities in the chart are used more often by students who use AI almost every day. Among them, **solving math problems** and **summarizing texts** are especially more frequent among active users than passive ones, even if they are not the top activities for them.

STUDENT BEHAVIORS AND TRENDS IN AI USE

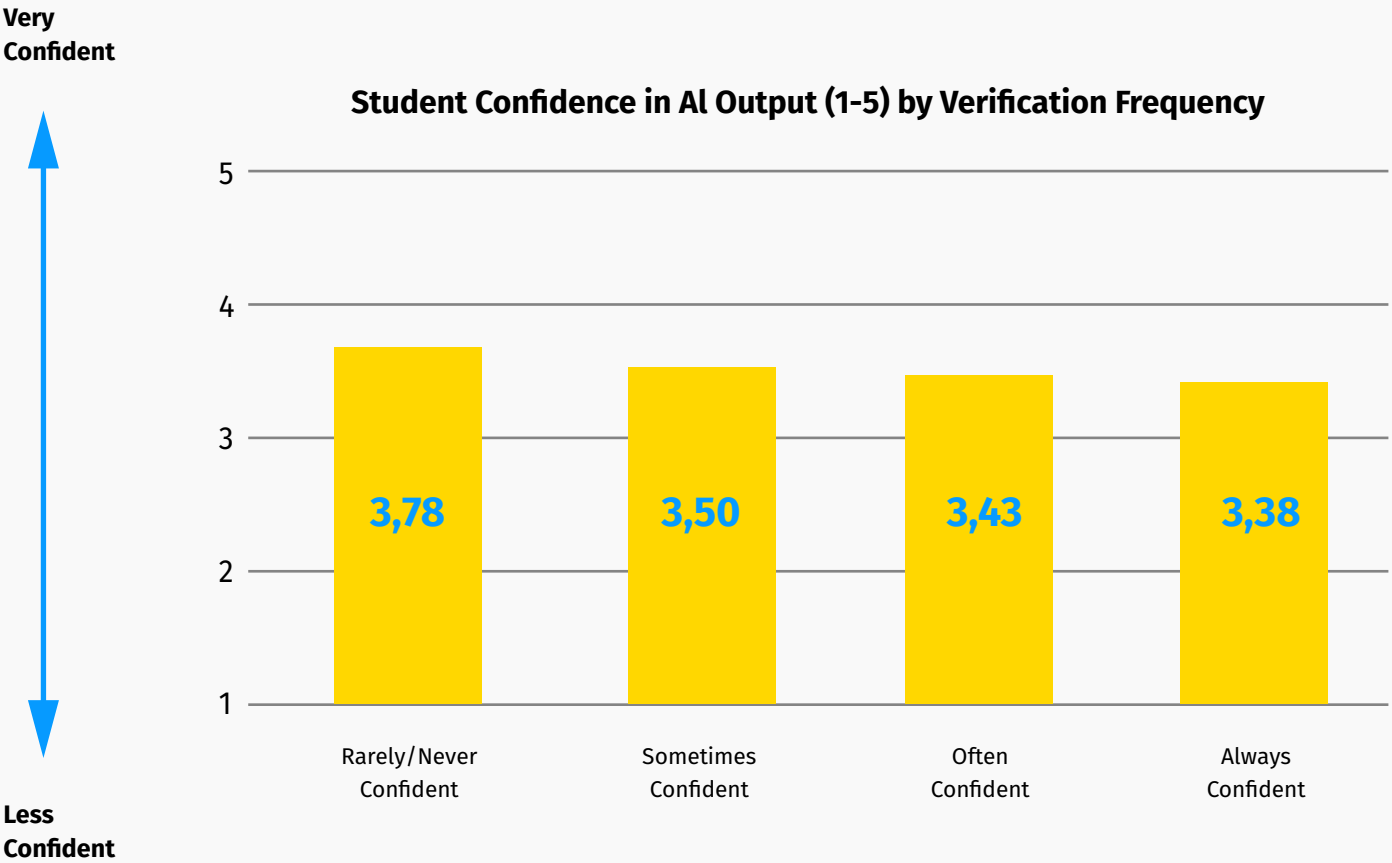
Enhanced Learning Is Gaining Ground: Explaining Topics Is a Recently Adopted but Already Popular AI Task



Tasks were categorized by overall usage and how recently they became common. Core Tasks, like finding materials, reflect early and widely established uses. Expanding Tasks are popular and represent more recent expansions of AI use. Emerging Tasks remain less common but are becoming more relevant. Niche Tasks are less used but associated with earlier stages of adoption.

STUDENT ATTITUDES AND CONFIDENCE IN AI

Students Who Don't Verify AI Output Are the Most Confident and That's a Problem



Most students in our research say they verify AI results at least sometimes. A key challenge is that students who rarely verify AI output are not less confident but actually more confident in its accuracy. This overconfidence can lead to uncritical acceptance of incorrect or misleading information.

In contrast, students who take time to verify AI output using multiple methods tend to remain more cautious and avoid over-relying on the tool. There is a weak but significant negative correlation ($\rho = -0.16$, $p = 0.037$) between verification and confidence.

STUDENT ATTITUDES AND CONFIDENCE IN AI

Students Use AI Primarily to Save Time

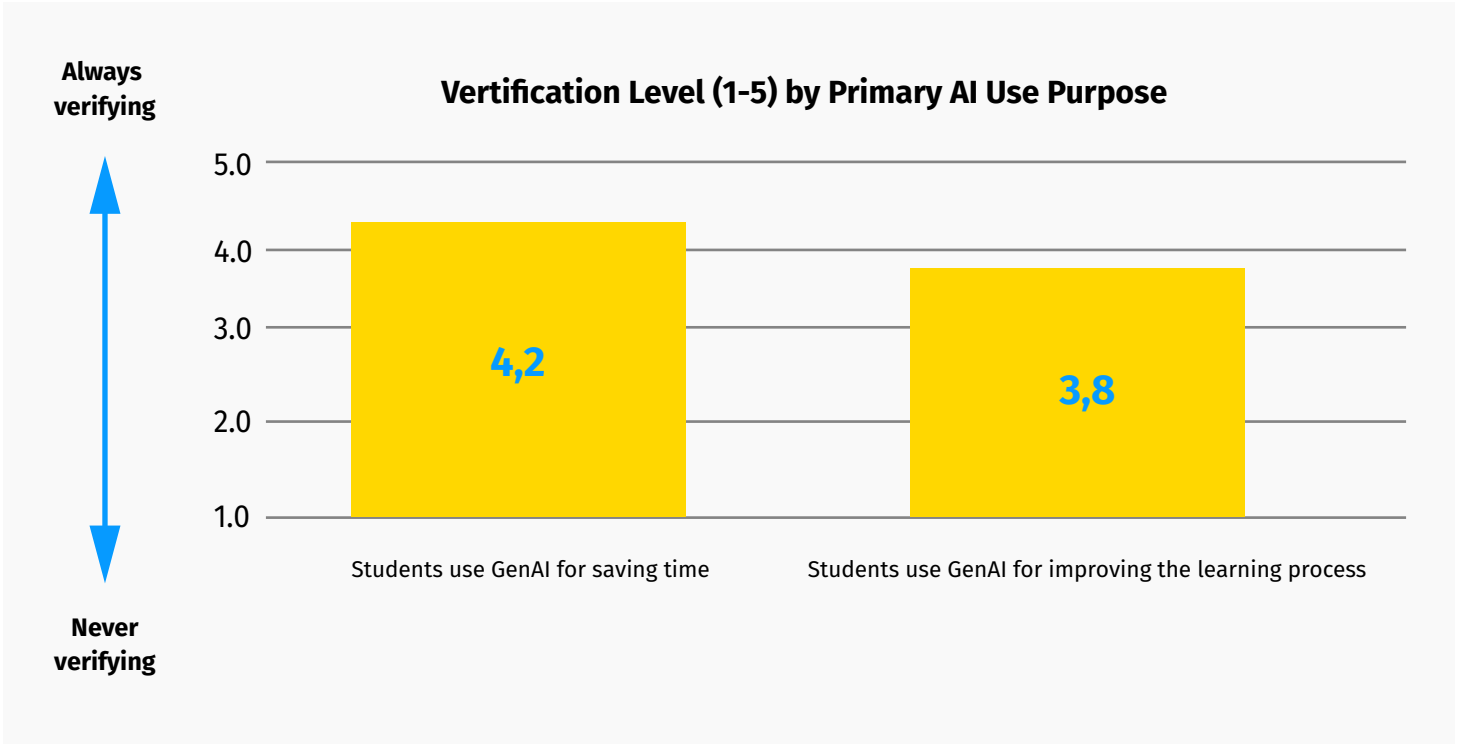
Main benefit to use AI in learning:

SAVING TIME

IMPROVING THE LEARNING PROCESS

BETTER GRADES **LESS EFFORT** **NEW IDEAS**

Most students (57%) use generative AI to save time, followed by improving learning process. Fortunately, using AI to save time doesn't mean skipping verification. These students are actually more likely to check results, mostly showing a balanced approach.



AI TOOLS FOR STUDENTS

ChatGPT Remains the Primary AI Tool, but Students Have Recently Started Adopting Newer Tools

ChatGPT is the primary AI tool used for learning, with nearly all students in the study reporting its use. Additionally, around two in five students were also using Gemini, while approximately one in five had experience with Claude.

62% of Gemini user

students started using it in learning recently

Gemini

70% of Claude user

students started using it in learning recently

Claude

STUDENT PERSPECTIVES AND REFLECTIONS

How Students Really Use AI – In Their Own Words

When I clearly explain what I want, AI performs the task perfectly

For finals, I send it the syllabus, ask for detailed explanations, and get quiz-style questions

For difficult topics, I ask it to explain using storytelling and a bit of drama

With Gemini's audio overview, I get lecture content in a more accessible way

I let AI solve Python tasks, then made it explain how it did them

Never trust AI with the whole task — give it a draft and let it refine

If you argue with ChatGPT, it immediately agrees — sometimes even with nonsense. That's its weakness

I like that BTU teaches us how to use AI correctly instead of banning it

STUDENT CONCERNS AND CHALLENGES

Most Student Concerns Are About the Quality and Reliability of AI Output

Main problems mentioned by students

HALLUCINATED INFORMATION/SOURCE

UNNATURAL GEORGIAN

MISLEADING ANSWERS

STRUGGLES WITH MATH AND FINANCE

LIMITED ACCESS

RESPONSES ARE TOO LONG OR UNFOCUSED

Many students shared that their main concerns are not about using the tools themselves, but about what they get in return. They worry most about the quality, clarity, and trustworthiness of the responses. Whether it's overly long texts, incorrect answers, or strange phrasing.

Students' experiences reveal a clear need for more personalized tools, ones that understand their level, language and subject-specific needs.

LECTURER-IDENTIFIED BARRIERS AND RISKS

Evaluation Is the Main Short-Term Barrier for Lecturers in AI Integration

Main problems mentioned by lecturers

STUDENT MOTIVATION SHIFT

PLATFORM LIMITATIONS

OVERLOAD FROM AI-GENERATED CONTENT

LACK OF STUDENT COMPETENCE USING AI EFFECTIVELY

DIFFICULTY ASSESSING STUDENT CONTRIBUTIONS

Lecturers noted that while some faced no issues, most struggled with evaluating student work fairly due to AI-generated submissions. Many assignments lacked originality and reviewing them became overwhelming. AI also use led to unnatural phrasing. Some students lacked the skills to use tools effectively and financial or technical limitations also posed barriers. The is also a need for deeper changes in teaching and assessment practices.

INNOVATIVE PRACTICES IN AI-ENHANCED TEACHING

Creating Text, Audio, and Video Overviews Using NotebookLM

NotebookLM

Lecturers use NotebookLM to upload lecture slides, readings, or notes and automatically generate summaries, topic explanations, and structured overviews. The tool allows educators to extract key points and even convert the generated text into scripts for short audio or video guides, which can then be recorded or processed through other tools. This helps students grasp the material in multiple formats.

Simplifies creation of text, audio, and video summaries from existing materials;

useful for flipped classrooms.

Audio/video generation may require separate tools;

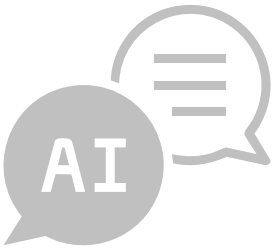
content accuracy still needs review.

INNOVATIVE PRACTICES IN AI-ENHANCED TEACHING

Custom Learning Assistant GPT

ChatGPT

Lecturers use GPT Builder to create a custom chatbot trained on course materials, policies, and tasks. After uploading documents and writing basic instructions, the bot can answer student questions, explain tasks, or summarize concepts at any time. Students don't need any installation and can access the assistant using a regular ChatGPT account. This reduces routine inquiries and offers continuous support.



Free ChatGPT users can access it;

no code or IT support needed.

Requires a ChatGPT Plus account for the instructor;

no analytics for lecturers.

INNOVATIVE PRACTICES IN AI-ENHANCED TEACHING

Creating Presentations with AI Tools like Gamma

Gamma tome Canva

Educators use Gamma and similar AI presentation tools (such as Tome or Canva Magic Design) to transform lecture outlines, topic notes, or AI-generated content into fully structured and visually appealing slide decks. The platform automatically organizes content, suggests slide layouts, and adds visual design elements, reducing the time typically spent formatting and editing. This allows instructors to focus more on content and pedagogy.

Quickly turns text into clean, themed slides;

reduces time on formatting.

Some features require a paid plan;

exports (e.g. to PPT) may need review.

INNOVATIVE PRACTICES IN AI-ENHANCED TEACHING

Creating Visuals and Infographics with DALL·E, Midjourney, and Canva

ChatGPT Midjourney Canva

Instructors use AI image-generation tools like DALL·E and Midjourney to create visuals that bring abstract concepts to life, and platforms like Canva to design infographics, diagrams, and posters. These tools allow educators to illustrate topics that are hard to explain verbally.

Enhances visual understanding;

useful for digital materials.

Visuals may need manual edits;

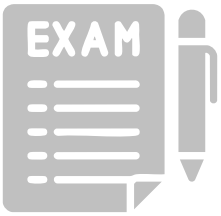
Georgian text on images often doesn't render properly.

INNOVATIVE PRACTICES IN AI-ENHANCED TEACHING

Designing Quiz Questions

ChatGPT Claude Gemini

Lecturers use AI tools like ChatGPT to generate formative and summative assessment materials from their own course content. By inputting a lecture transcript or a reading list, instructors can quickly create multiple-choice, open-ended, or reflection-based questions. Some platforms allow automatic quiz generation from uploaded documents, making it easier to assess student comprehension.



Saves considerable time in quiz design;

can produce level-based assessment format.

Quality varies based on input.

INNOVATIVE PRACTICES IN AI-ENHANCED TEACHING

Generating Course Content When No Suitable Textbooks Exist

ChatGPT Claude Gemini

When instructors face the challenge of outdated, unavailable, or non-existent textbooks—especially in local languages or niche topics—they turn to tools like ChatGPT, Claude, or Perplexity to generate structured learning content. Educators can input course themes or outcomes, and the AI generates explanations, examples, case scenarios, and even sample readings tailored to that subject.

Creates custom, adaptable content in real time;

supports teaching in emerging subjects.

Requires validation for academic accuracy and cultural relevance;

some outputs may be overly general.

INNOVATIVE PRACTICES IN AI-ENHANCED TEACHING

Teaching AI Ethics via Prompt Comparisons

ChatGPT Claude perplexity

Lecturers demonstrate ethical and design differences in AI tools by using the same prompt across multiple platforms such as ChatGPT, Claude, and Gemini. This exercise helps students observe how tool design, training data, and safety settings impact the output.

Makes abstract ethical topics concrete;

supports critical digital thinking.

Facilitation is important to keep the focus pedagogical

WHAT IS DIGITAL ECOSYSTEM DIGEST?

Digital Ecosystem Digest is a quarterly electronic research report issued by the BTU Center for Entrepreneurship.

The report reviews current technological and innovative trends in various sectors of the digital economy of Georgia and covers topics such as: AI, startups in digital business, e-commerce markets, digital platforms (B2B, B2C, C2C), fintech, etc.

The purpose of the report is both to consolidate existing information and to generate new practical knowledge about the digital economy.

Each research report will be co-authored by different researchers. The current edition is authored by BTU affiliate Associate Professor Tsotne Zhghenti.

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