SİVAS BİLİM VE TEKNOLOJİ ÜNİVERSİTESİ

DISTANCE EDUCATION APPLICATION AND RESEARCH CENTER

Developing Educational Materials Using Generative Artificial Intelligence Tools

Lecturer

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Outline

- Use of generative artificial intelligence applications in educational processes
- Artificial intelligence tools that can be utilized in educational content and material design
- Creating instructional resources aligned with learning outcomes and course topics
- Digital and AI-supported tools that can be used in measurement and evaluation processes

The Use of Generative Artificial Intelligence in Education

Content Creation: Creating lecture notes, lesson plans, and summary materials aligned with course topics; explaining concepts at different difficulty levels (basic–intermediate–advanced); enriching text-based content with visuals, tables, or examples.

Personalized Learning: Providing differentiated explanations based on students' achievement levels; offering supplementary worksheets to address learning gaps; creating content aligned with visual, textual, or example-based learning preferences.

Assignment Creation: Designing assignment instructions targeting different cognitive levels; writing original open-ended assignments requiring analysis and interpretation; preparing assessment rubrics for assignments.

Exam Creation: Generating multiple-choice, true–false, matching, and open-ended questions; creating questions at varying difficulty levels for the same learning outcome; preparing answer keys and explanations aligned with question stems.

Idea Development: Developing project, performance task, and activity ideas; designing interactive in-class learning scenarios; creating problem-based learning scenarios based on real-world issues.

ChatGPT – Example Uses

Writing Learning Outcomes

“As a lecturer of an undergraduate-level Data Structures course, can you write the learning outcomes?”

Writing Course Objectives

“As a lecturer of an undergraduate-level Machine Learning course, can you write the weekly course objectives for the topic ‘Introduction to Machine Learning’?”

Selecting Teaching Methods

“Which teaching method would be most appropriate to achieve these objectives? Can you choose and explain an effective method suitable for university students?”

Content Creation

“To increase students’ interest in the lesson, can you write an engaging introductory question to start a class on the topic ‘Basic Principles of Thermodynamics’?”

ChatGPT – Example Uses

Creating an Activity: “Can you transform the topic ‘Basic Principles of Thermodynamics’ into a gamification-based in-class activity?
The activity should last 20 minutes and allow active participation from students.
It can be a physical or digital game.
Can you write two different scenario examples that could be used in this activity?”

Brochure Creation: “Can you create a handout to be distributed to students at the end of the lesson on the topic ‘Basic Principles of Thermodynamics’?
The total length should not exceed two pages.
It should include all essential information and be supported with visuals.”

ChatGPT – Evaluation and Assessments

Assessment Questions:

“Can you write 10 multiple-choice and 3 open-ended questions to be used for assessment at the end of the ‘Basic Principles of Thermodynamics’ course? Can you also prepare the answer key for these questions?”

Measurement and Evaluation: “Based on these objectives, which method would best measure student achievement? Can you suggest an innovative and modern assessment method?”

Performance Assessment: “Can you prepare an assessment rubric for performance evaluation? The assessment should be scored out of 100 according to sub-dimensions of the objectives.”

Artificial Intelligence Tools That Can Be Used to Create Educational Materials

Almanack – https://www.almanack.ai

EduAide – https://eduaide.ai/app/generator

MagicSchool – https://app.magicschool.ai

Brisk Teaching – https://www.briskteaching.com/

SchoolAI – https://app.schoolai.com

Measurement and Evaluation: automark.ai

Other Tools: https://aieducator.tools/

Thank You for Listening!