



Generative AI and New Frontiers in Distance Education: The Potential of “HIU Brain”

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Challenges in Traditional Distance Education

Hokkaido Information University (HIU), JAPAN has a long history of conducting distance education using ICT, but it faces several challenges:

- Heavy reliance on self-directed learning (printed materials / on-demand content).
- Limited opportunities for real-time interaction with instructors.
- Delayed feedback on questions and assignments.
- Difficulty maintaining student motivation and engagement.
- Lack of collaborative or peer-learning environments.

These challenges highlight the structural limitations of one-way education.

“HIU Brain” and its Expected Educational Effects

“HIU Brain” is a generative AI-based learning support system introduced in 2026. It provides personalized learning through interactive dialogue with an AI instructor, immediate feedback, and adaptive explanations. Trained on instructor-developed course materials, it also incorporates virtual classmates and AI assistants to create an engaging online learning environment.

“HIU Brain” improves learning outcomes by providing immediate feedback and personalized support. It enhances student engagement and motivation while promoting active, interactive, and adaptive learning. By shifting from one-way content delivery to learner-centered interaction, the system demonstrates the transformative potential of generative AI in distance education.

Concept of “HIU Brain”

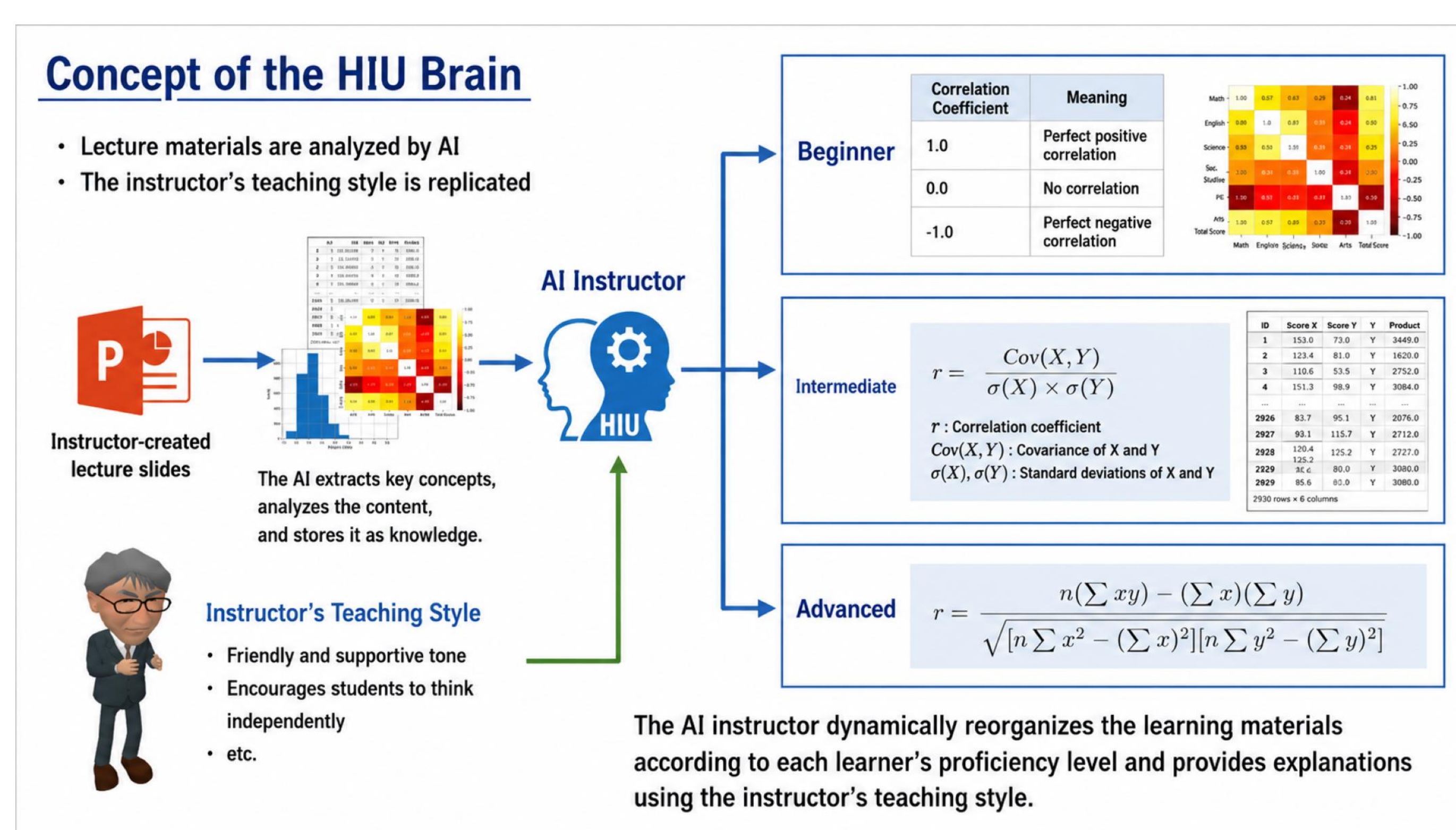
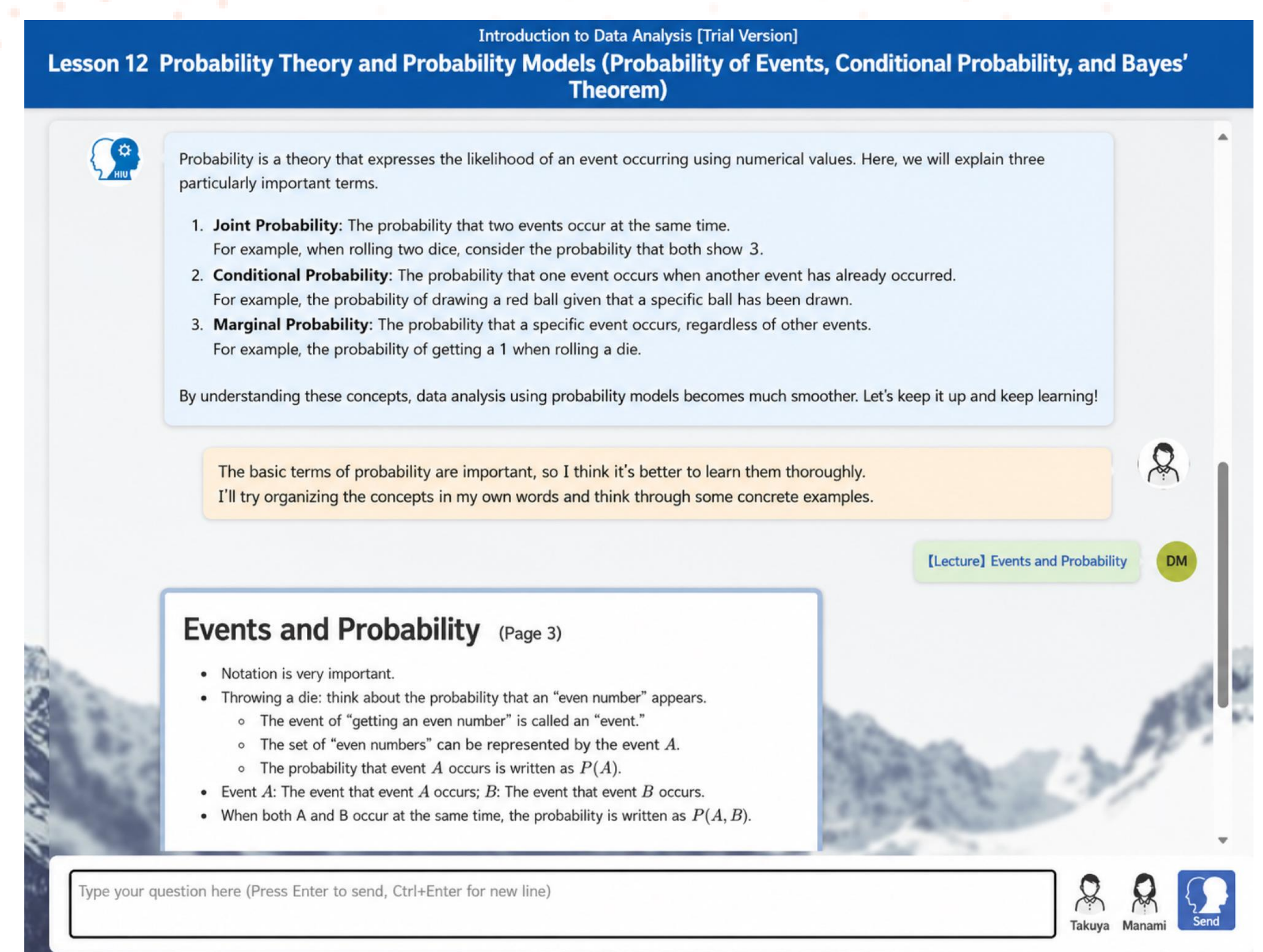


Image of the Interface



The first AI-powered learning system in Japan that enables students to engage in interactive learning with an AI instructor, with instruction dynamically adapted to each learner's level of proficiency.

The system is currently in operation in four courses.

(The interface has been translated into English for presentation purpose. The original interface is in Japanese).