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Navigating the Terrain:

Emerging Frontiers in Learning Spaces, Pedagogies, and Technologies

Harnessing AI: Seamless Digital Tool Integration for Enhanced Educational Outcomes

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Integrating digital tools in education is essential for innovative teaching and learning (Msafiri et al., 2023). However, their mere availability does not ensure effective implementation. This presentation explores the development of an AI-powered chatbot designed to assist academics and learning designers in effectively using digital tools. Guided by the Technological Pedagogical Content Knowledge (TPACK) model and the Teaching Enhanced Learning Accreditation Standards (TELAS) framework, this project aims to bridge the gap between tool availability and effective usage.

Effective implementation of digital tools begins with human factors, precisely the vision and expertise of educators. To achieve this, the TPACK model highlights three critical domains: technological knowledge, content knowledge, and pedagogical knowledge (Mishra & Koehler, 2006). These domains are critical to the effective and successful implementation of digital tools in the teaching-learning ecosystem. Our AI-powered chatbot leverages the TPACK model to connect educators' pedagogical and content knowledge by conducting a needs assessment based on user-provided inputs and recommending suitable tools for enhanced teaching and learning.

The chatbot interacts with users through precise, conversational inquiries, gathering detailed information on course titles, learning objectives, students' expectations, delivery methods, interaction types, desired tool functionalities, and accessibility considerations. This comprehensive approach ensures the chatbot provides well-informed, contextually relevant responses and resources to the users, thereby enhancing instructional effectiveness. By offering continuous support through our self-enrolled teaching support Canvas site, the chatbot ensures educators have access to assistance when needed, making it particularly beneficial for busy academics and learner designers. This then breaks the traditional barriers of time and place and offers users flexibility and real-time quality digital tool solutions.

The chatbot knowledge base is built from a comprehensive tool document that maps each available tool used at the University of Sydney Business School to the [TELAS framework](#). This framework sets rigorous standards and criteria for evaluating the quality of online environments, making it ideal for assessing tools across critical domains, including the online learning environment, learner support, learning and assessment tasks, and learning resources. By configuring this quality resource, the chatbot empowers educators to develop a deeper understanding of effectively integrating technology into their teaching practices for a successful learning experience

Additionally, the chatbot provides real-time solutions on available tools, supporting continuous professional development and helping educators stay updated with the latest digital tools for their teaching needs. It offers use cases and knowledge base articles, addressing fragmented knowledge, time constraints, and technical expertise gaps, making it a valuable resource for newly recruited learning designers or academics to easily familiarise and induct themselves in the digital tool space. It offers quality assurance in tool usage by employing the TELAS framework. Moreover, the user data collection can provide insight for organising tailored training and support for academics.

In conclusion, this presentation demonstrates the practical application and benefits of our AI-

powered chatbot to improve digital tool integration in education. Using the TPACK and TELAS frameworks, the chatbot provides personalised support, helping educators seamlessly incorporate technology into their teaching and offering real-time recommendations to address digital tool challenges. It helps both new and experienced educators enhance their teaching, combining technology, pedagogy, and content knowledge for effective learning.

Keywords: AI, chatbot, TELAS framework, innovation, digital tools, technological knowledge

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