



Digital Technology for a Borderless World: Innovative Educators in Practice

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The Association for Digital Education and Communications, Technology (ADECT) is an international organization in Nigeria that promotes the application of information and communication technology in education, instructional design, and the development of a systematic approach to learning (www.adect.org.ng). ADECT also advocates for the improvement of instructional delivery systems and educational technology. The Association for Educational Communications and Technology (AECT), as a major professional organization in the field of Educational Technology with diverse memberships around the globe, has a long history of promoting and facilitating collaborative research efforts among its members on the international stage. The AECT International Division with a mission to facilitate communications and interactions that transcend international boundaries and cultural lines, is promoting scholarly collaborations worldwide. To promote innovative research globally, ADECT and the International Division of AECT have collaborated to sponsor this special section of *TechTrends* with the theme, “Digital Technology for a Borderless World: Innovative Educators in Practice.”

After the diligent work of our authors and our reviewers, we are very pleased to present three articles in this special section. In the first article, *Student Perception of the Computer-Based Tests in the Use of English” Programme in Nigerian Universities*, Philomina Akudo Agbo and other four faculty members from University of Nigeria collaborated to explore student perceptions of computer-based tests (CBTs) for students in the “Use of English” programs in a Nigerian University. Using a survey instrument based on the unified theory of acceptance and use of technology,

their study captured student perceptions of CBTs from 1200 undergraduate student participants. Through focus group discussions, the researchers further explored student perceptions of CBTs and their relationship with performance expectancy, effort expectancy, social influence, and facilitating conditions in the process. Their study found that students had a very positive perception about the use of English in CBTs although they also experienced infrastructural and technological challenges. The findings are significant to strengthening the use of CBTs and to the improvement of its future use.

In the second article, *Discovering Unproductive Learning Patterns of Wheel-spinning Students in Intelligent Tutors Using Cluster Analysis*, Dr. Park studied the unproductive learning pattern of “wheel-spinning” students with intelligent tutors systems (ITSs). “Wheel-spinning” refers to students’ unproductive persistence without the mastery of required skills in learning. Understanding the unproductive learning pattern of “wheel-spinning” students during the use of ITSs is crucial to help improve those students’ productivity and learning. The study used the t-SNE and Kmeans clustering algorithms to probe the wheel-spinning learning patterns. As a result, Dr. Park identified in the study three types of wheel-spinning patterns in an online mathematics tutoring system. The three types were: a lack of motivation, math knowledge, and metacognitive ability, which caused the failure to learn math with ITSs. The study provided us with a deeper understanding of students’ failure in learning and offers direct implications on how we can help those wheel-spinning students to learn effectively with ITSs.

The third and final article, *Effects of Two Modes of Digital Storytelling Instructional Strategy on Pupils’ Achievement in Social Studies*, reports a study by Emmanuel Omoarebu Lawani and his faculty colleagues from University of Ibadan in Nigeria and Clemson University in the USA. They studied the use of digital storytelling as an instructional strategy to enhance students’ achievement in Social Studies. They examined the effects of

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two modes of digital storytelling instructional strategy (Think-pair-share Collaborative and Centralized Video-based) as well as the moderating effects of gender and age on pupils' achievement in Social Studies. Their study, with 0.05 levels of significance, found that the treatment had a significant main effect on pupils' achievement while gender, age, and the 3-way interaction effect were not significant. The findings suggest that digital storytelling is an effective strategy in enhancing pupils' achievements, regardless of age and gender, and encourage teachers to adopt digital storytelling strategies for Social Studies to enhance learners' creative ability.

We want to mention that our collaborative efforts with this special section went beyond these three articles. We also wish to acknowledge the work of Moemeke and Mormah, whose article, "*Pre-Service Science Teachers' Perceived Effect of Twitter Ban on Learning and Communication*," was published in the previous issue of *TechTrend*. Dr. Moemeke and Dr. Mormah investigated the impact of the Twitter ban on learning and communication of Nigerian pre-service

teachers. Their study found the ban of Twitter in Nigeria affected the learning and communication of the pre-service teachers and offered direct implications for teaching, learning, and policy review for Nigerian higher institutions and other countries in similar situations.

We would like to express our sincere gratitude to the authors and reviewers who contributed to this special section. We are very grateful for the full support we received from ADECT and the AECT International Division while working for this special section. We also want to take this opportunity to express our sincere gratitude to Dr. Charles Hodges, *TechTrends'* Editor-in-Chief, for his leadership, professional guidance, and shared vision in creating this special section. We are truly honored and blessed to work with Dr. Hodges. Together, we hope that this collection of articles will inspire further research in the use of technology to improve learning and instruction.

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