

Contents

VARTeL Innovation	1
Yiyu Cai, Sui Lin Goei, Umesh Ramnarain, Jieqiong Chen, and Ingrid Winkler	
Effectiveness of Virtual and Augmented Reality Learning Environments in Enhancing Students’ Self-efficacy	39
Ming Yi Chan, Abu Bakr Azam, Lihui Huang, Yuan Xie, Siyi Li, and Yiyu Cai	
Optimizing Learning Through Game Design: An Essential Role in Educational Games	71
Jin Wen Chung, Abu Bakr Azam, Yuan Xie, Siyi Li, Lihui Huang, and Yiyu Cai	
Stealth Assessment for VR-based Skill Training Utilizing Hand Motion Detection	111
Siang Jian Phang, Siyi Li, Yuan Xie, Lihui Huang, and Yiyu Cai	
VARTeL for STEAM Education: Qualitative and Quantitative Analysis	143
Junhong Song, Abu Bakr Azam, Lihui Huang, Yuan Xie, Siyi Li, and Yiyu Cai	
Virtual Reality Enabled Robotic Surgery Training Through Telesurgery	165
Patel Akshet, Yiyu Cai, and Randhawa Princy	
Tree Pruning Simulation and Tree Growth Modelling	189
Zhen Xuan Tan, Chee Kiat Seow, Yiyu Cai, and Qi Cao	
Educational Metaverse for Learning of CPU Scheduling Algorithms in Operating Systems	211
Eng Choon Ang, Yiyu Cai, Min Wang, and Qi Cao	

Designing Immersive Experiences Grounded in Culturally Relevant Teaching and Learning Strategies	231
Tutaleni Iita Asino, Oluwafikayo Adewumi, Ayodeji Ibukun, Tilanka Chandrasekera, Nicole Colston, Cynthia Orona, Allison Howard, Piper Bott, Katie Allen, and Brandon Scott	
Evaluating Learning and Engagement in Immersive Spaces	247
Tutaleni Iita Asino, Nicole Colston, and Clement Abai	
Using a Hierarchy of Data Sources to Represent Cultural Heritage Sites a Case Study of Sophiatown, Johannesburg in Virtual Reality	263
I. F. Potgieter, D. M. Hendricks, and M. Ntshona	
An Interactive VR/Desktop-3D System for Nasal Sinus Anatomy Education	281
Yanlin Luo, Wenjing Li, Yuhui Wang, Weini Hu, Peidi Gu, and Jing Wang	
The Effectiveness of the Force Feedback Technology Application in the Immersive Physics Learning	303
Yanlin Luo, Xinyi Ye, Hailin Ji, Qifan Meng, Peidi Gu, and Jing Wang	
Toward Universally Accessible Interactive Augmented Reality in Education: A Case Study of Developing a Photoelectric Effect Experiment in Interactive Augmented Reality	325
P. H. Myburgh, I. F. Potgieter, and Umesh Ramnarain	
Phantom Touch in VR and Its Potential Uses in the Education Field	339
Sasha Alexdottir	
La Scuola di Atene: Immersive Virtual Reality for Science Education	361
Mao-Ren Zeng and Mei-Hung Chiu	
A Cyber Physical Architecture for Symbiotic Multi-robot Fleet Management	379
Daniel Mitchell, Yue Gu, Jamie Blanche, Samuel Harper, Blair Archibald, Michele Sevegnani, and David Flynn	