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REPORT

Design and Implementation Considerations for Virtual Reality in Human Services

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As coeditors, we are humbled to contribute to the literature and knowledge regarding the creation of virtual reality (VR) technologies, and their integration into the professional domains of social work, through this peer-reviewed special issue of the *Journal of Technology and Human Services*. The special issue titled *Design and Implementation Considerations for Virtual Reality (VR) in Human Services* aims to provide crucial considerations, strategies, findings, and lessons learned for researchers or clinicians looking to imbed VR technology into their practice. This special issue highlights the challenges and barriers when developing VR technologies, including hard-to-reach populations, collaborating with other disciplines, and navigating situations such as distance learning and new safety protocols posed by Covid-19. In addition, the special issue discusses the importance of ethically developing VR to address these challenges and how VR technology can be both designed and implemented in a fashion that is forward looking, effective, and leveraged beyond "technology for technology's sake."

Technology for technology's sake is the idea that using new technology will in-and-of-itself lead to more effective or efficient training and practice. This misunderstanding is one of the origins behind this special issue. In human services, VR is gaining traction as a viable option for increasing training and practice effectiveness. It can provide safe, accessible, and realistic environments for training human service professionals or helping clients. These goals *can* be realized when developing VR approaches using evidence-based design and implementation principles.

Unfortunately, while numerous VR software programs exist in human services or are in development, many of them appear to have been created without considerations of theory, ethics, design elements tailored to the unique users, or sustainability. VR software developers who know very little of human services often drive the development approach, leaving training

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and intervention developers to determine how to "retrofit" the engineers' vision effectively. Conversely, professionals in the field of human services may have limited experience designing VR software. Therefore, the intersection and collaboration efforts between software developers and those in the human-services industry is also a key design element that should be addressed.

As highlighted in the six articles featured in this special issue, there are numerous design and implementation considerations when developing VR tools for human services. These articles present various methods for using VR technologies that reach an array of populations and involve experiences that interact with virtual people, environments, or both. The articles provide guidelines, examples, and lessons learned in the design and implementation of VR to develop ethical technology grounded in evidence-based theories.

Featured articles such as "Acceptability and Feasibility of Peer Specialist–Delivered Virtual Reality Job Interview Training for Individuals with Serious Mental Illness: A Qualitative Study" by Üstel et al., and "Toward a Framework for Developing Virtual Reality Skills Training in Human Services" by Davis et al., discuss the ethics of designing VR that aims at, and effectively considers, how the technology contributes to the betterment of those impacted. Others, like Washburn et al., provide research and safety guidelines when incorporating VR-based technologies for at-risk populations such as the elderly in their article, "Creating Virtual Reality–Based Interventions for Older Adults Impacted by Substance Misuse: Safety and Design Considerations." Contributions to approaching ethical dilemmas around inclusion and privacy issues related to technology are also included by Sturman et al. in their article, "Development of an Immersive Virtual Reality Learning Environment: Integrating Trauma-Informed Principles into Human Service Agency Settings," as well as by Davis et al.

Several researchers in the special issue incorporated user input into the design process within the development phase of the VR technologies. Researchers such as Washburn et al., Davis et al., and Roberson and Baker outline how user testing and feedback are taken into account throughout the process of creating VR tools that will be used in their specific populations. In addition to discussing the importance of user involvement in the design portion, Üstel et al. highlight the inclusion of both the practitioner and the client's input into the design process.

This special issue highlights the importance of using evidence-based theories to guide the development of VR technologies within the realm of human services. The scope of the special issue does not prescribe all the theories explicitly necessary for VR technology. Instead, the articles discuss the application of theory and the importance of doing so to develop ethical,

reliable, sustainable, and effective technologies for the populations served. Featured in the special issue are theories of learning, such as constructivist theory (Sturman et al.), the theory of deliberate practice (Davis et al.), and theories of classical conditioning (Rizzo et al.; Washburn et al.), as well as theories that drive clinical practice such as cue response theory (Washburn et al.) and prolonged exposure theory (Rizzo et al.).

Lastly, the articles in this special issue include VR design and implementation considerations for a number of different populations. For example, Washburn et al. focus on safety and ethical guidelines for using VR with older adults combating substance abuse. Roberson and Baker include VR that aims to provide students the skills to enhance parenting skills to new mothers. Some articles center around VR technology that will be used by practitioners, specifically for those dealing with mental illness (Üstel et al.), PTSD (Rizzo et al.), or substance use (Washburn et al.). Others, such as Davis et al., encompass those in the child welfare workforce, while Sturman et al. and Roberson and Baker contribute considerations for developing VR for student learners.

We would like to sincerely thank all the contributors who submitted papers and served as reviewers for this special issue. In the following section, a table outlines all author contributions, as well as reviewer contributions during our open review process. We appreciate all of your responsiveness and diligence toward the publication of this issue. We hope that this special issue will guide those looking into the development and incorporation of VR technologies and shed light on the need for careful consideration of ethics, theories, and design aspects that intentionally aim to support specific populations when creating these technologies. We hope the readers find areas of interest and application within this published selection. We would finally like to extend our thanks to Lauri Goldkind, editor of this journal, whose support was invaluable to us in our role as guest editors.

Authors	Title	Reviewers
C. Jean Roberson Lisa R. Baker	Designing and Implementing the Use of VR in Graduate Social Work Education for Clinical Practice	Louanne Bakk Judy Krysik
Pınar Üstel Matthew J. Smith Shannon Blajeski Jeffery M. JohnsonValerie G. Butler Johanna Nicolia-Adkins Monica J. Ortquist Lisa A. Razzano Adrienne Lapidos	Acceptability and Feasibility of Peer Specialist–Delivered Virtual Reality Job Interview Training for Individuals with Serious Mental Illness: A Qualitative Study	Mickey Sperlich Chad McDonald
Steven Sturman Mickey Sperlich Louanne Bakk Samantha Koury	Development of an Immersive Virtual Reality Learning Environment: Integrating Trauma- Informed Principles into Human Service Agency Settings	Walter LaMendola Matthew J. Smith
Micki Washburn Aaron Hagedorn Steven Moore	Creating Virtual Reality Based Interventions for Older Adults Impacted by Substance Misuse: Safety and Design Considerations	Cole Benson Matthew J. Smith
Matt Davis Josh Raines Cole Benson Chad McDonald	Toward a Framework for Developing Virtual Reality Skills Training in Human Services	Micki Washburn Steven Sturman
Skip Rizzo Arno Hartholt Sharon Mozgai	From Combat to COVID-19—Managing the Impact of Trauma Using Virtual Reality	Mickey Sperlich Matt Davis