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Theoretical models to evaluate acceptability of technology

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ABSTRACT

Digital tools to support healthcare delivery and education are increasingly used. Measuring acceptability of these digital tools is necessary to improve intention of use and subsequent implementation success in diverse settings. The main objective of this presentation is to describe various models to examine acceptability, so that knowledge users can make informed decisions on which measurement tools to use.

We conducted a rapid literature search of different models used to examine the concept of acceptability of various digital tools (e.g., serious games, virtual simulation, e-learning), among many audiences (including but not limited to healthcare providers, caregivers, patients), across many disciplines (e.g., psychology, medical education, nursing). We searched the following databases: PsyInfo, EMBase, Pubmed, EmPremium.

We selected five models: Technology of Acceptance Model (TAM)(Davis, 1985) TAM-2(Venkatesh, 2000) and TAM-3 (Venkatesh and Bala, 2008) Unified Theory of Acceptance and Use of Technology (UTAUT)(Venkatesh and Davis, 2003), and the General Extended Technology Acceptance Model for E-Learning (GETAMEL)(Abdullah, 2016). The two main common variables of these models are perceived ease of use and usefulness that predict intention to use. External variables are proposed in these models and may influence the intention to use the digital tools, such as: gender, self-efficacy, experience, perceived enjoyment, motivation, and satisfaction. All of those variables are measured with a Likert-scale survey(Likert, 1961). Corresponding measurement tools deriving from these models have all been validated.

Those five models can all be used for measuring acceptability of technology. The external variables pertaining to those models need to be adapted to the unique context of digital tools implementation. These models can be easily used by various users (e.g., nurses, educators, clinicians, researchers, patients) to inform the acceptability of many digital tools and guide the intention to use.

Video to this article can be found online at <https://doi.org/10.1016/j.sctalk.2022.100112>.

CRedit authorship contribution statement

Guillaume Decormeille: Conceptualization, Methodology, Software, Data curation, Investigation, Writing – review & editing, Visualization, Supervision. **Geneviève Rouleau:** Conceptualization, Methodology, Software, Data curation, Investigation, Writing – review & editing.

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Data availability

No data was used for the research described in the article.

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Declaration of interests

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: Decormeille G declare a financial of interest with Simforhealth for his PhD study.

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Further reading

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Guillaume Decormeille, Registered Nurse in ICU, MSc in Educational science, PhD in cognitive psychology and qualified in nursing science qualified in nursing science and research.

I have been working in ICU for mor twelve years at the ICU in CHU of Toulouse and trainer in health simulation for more ten years, holder of a master's degree in science of education. My fields of my of interest during my PhD is focus on the self-regulation of nursing student learning on screen-based simulation (cognitive, metacognitive and motivational factors) and the relation with performance et transferability in clinical practices and acceptability of new technology.

I am working with **SimforHealth** compagny who is the most famous editor of digital simulation (virtual reality and screen-based simulator) in France and I expanded my skillset in senior researcher in nursing science and e-health.

Investing on the editorial board of the French nursing science journal I expanded my skillset in nursing science and I am an expert in e-health and educational innovation for more five years. I got a national nursing trophy in 2015 and 4 distinctions (best scientific communications, posters and best software for safety patient in 2020) in nursing science.



Geneviève Rouleau, Registered Nurse, MSc in Nursing, PhD in Nursing

I have been working in research for more than 15 years at the Research Chair in Innovative Nursing Practices. My fields of interest focus on the impact of digital health and e-learning on nursing care, the relational dimension of care, the interplay between compassion and digital care, and building patients and providers' capacities. In my thesis, I developed and evaluated the acceptability of a virtual patient simulation to improve nurses' relational skills. As a postdoctoral fellow (2020 – 2022) at Institute for Health System Solutions and Virtual Care, Women's College Hospital, I expanded my skillset in intervention development as well as in implementation science.

Recently, my project got funded by AMS to use virtual patient as a training modality to build capacity in digitally-enabled compassionate care among nurses and physicians. I am going to start a professor position at the Nursing Department of the *Université du Québec en Outaouais* (Québec, Canada) in December 2022.