

Using Immersive Technology for Social and Emotional Learning

Marcus Cheng Chye Tan and Stefanie Yen Leng Chye

KEY IMPLICATIONS

- Using virtual reality or immersive virtual environments (IVES) can improve students' abilities to empathize and assume another person's perspective.
- IVEs can be more effective as a mode of teaching social and emotional learning (SEL) compared to conventional approaches of viewing a 2D video or reading a story/narrative.
- IVEs can be novel and engaging ways to revitalize the teaching of SEL in a character and citizenship education (CCE) context.

BACKGROUND

Students are currently introduced to social and emotional learning (SEL) during Character and Citizenship (CCE) or social studies lessons. However, CCE lessons have been perceived to be less effective and lacking in realism or applicability, thereby revealing a need to explore new approaches to teaching SEL. Educational technologies like IVEs can be an effective and engaging way to develop SEL in students, and for use in CCE lessons. The first-

person perspective in cinematic IVE facilitates the possibility of greater realism and deeper identification with the protagonist, allowing for ease and effectiveness of perspective-taking, and thereby possibilities for empathic responses with, consequentially, more responsible decision-making.

FOCUS OF STUDY

This project compared the effectiveness of IVEs with conventional modes of teaching such as video-viewing (VID) and pen-and-paper (PP) mental simulation. The research questions are:

1. Which modality is more effective in developing social awareness, specifically empathy and perspective-taking and responsible decision-making? Is IVE necessarily more effective than conventional approaches of teaching SELs: (i) PP and (ii) 2D VID?
2. What are students' experiences with (i) pen-and-paper problem scenarios, (ii) 2D video scenarios, and (iii) IVE scenarios? What role do technological mediums play in students' development of SEL, and how?

KEY FINDINGS

- IVEs are effective in fostering perspective-taking and empathy for a larger percentage of participants/students, compared to VD and PP.
- PP is able to generate significantly stronger degrees of perspective-taking, shown in the second experiment session, based on quantitative analysis.
- PP is also able to facilitate more responsible decision-making for a larger percentage of students compared to IVE and PP.
- Overall, IVE's effectiveness can be attributed to its capacity to generate greater immersion, presence and embodiment.
- Less stereotypical, more realistic/real-world narratives/storylines impact responsible decision-making; stereotypical/trite and unrelatable stories create disinterest and disengagement from the task.

SIGNIFICANCE OF FINDINGS

Implications for practice

There is the possibility of programmatic and purposeful incorporation of IVE in all secondary school classrooms, as a means to teach SEL.

Implications for policy and research

The study supports existing literature proving how IVEs can have positive impact on perspective-taking and empathy due to greater immersiveness, presence and embodiment experiences.

Learning gains (for studies involving intervention)

This study evidences how educational technology can be used to complement existing pedagogical approaches to teaching SEL, and posits the limitations of IVEs, as ed tech, as a "replacement" to conventional approaches. Future policies can consider complementary approaches to teaching SEL, and also adopt the findings of this study regarding the importance of less stereotypical, more real-world narratives. CCE curriculum for SEL can also adopt more first-person problem-based learning approaches.

Proposed Follow-up Activities

As this project only involved a single school (and a school that has academically strong students), a more extensive study involving students from various schools is necessary to provide more generalizable findings. Additionally, there can be new research that compares IVE-use with drama/theatre processes as both involve embodied modes of experience, i.e., perspective-taking and empathy from a first-person perspective.

PARTICIPANTS

This study involved 1 integrated programme school, 2 teachers (who assisted with the delivery of 1 lesson, 1 class each) and 76 students (who gave informed consent).

RESEARCH DESIGN

A quasi-experimental, pre-test post-test, non-equivalent group design was employed. The effects of the treatment conditions were assessed based on a treatment-control group design in which participants in treatment and control groups were administered the same set of questionnaires four times: before each treatment and after each treatment. To examine the effectiveness of the interventions in facilitating SEL over time and across different scenarios, there were two data collection sessions. Each session was conducted as part of a regular CCE lesson. For all treatments, and for both sessions, the topic of the lesson was introduced first, with this involving a general discussion about the social issue presented in the treatment. Following this, participants took the pre-test; the treatment took place followed by the post-test. The project employed a mixed-method approach to data analysis; both quantitative (pre-tests and post-tests) and qualitative (short answer questions and interviews) were adopted.

About the authors

Marcus Cheng Chye TAN & Stefanie Yen Leng CHYE are with the National Institute of Education, Nanyang Technological University, Singapore.

Contact Marcus Tan at marcus.tan@nie.edu.sg for more information about the project.

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