Comparing classroom-based interaction studies in physical and virtual contexts

What this research was about and why it is important
This article provides a comparative overview of classroom-based interaction studies in traditional language classroom contexts compared to three-dimensional virtual learning environments (3DVLEs). The second context, the 3DVLE, provides a relatively untapped area of research for language teaching and learning, but as language teaching and learning in 3DVLEs becomes more common, future research importantly will influence teaching practices and learning outcomes. However, the researcher needs to consider classroom implications according to the differences in the contexts. To better understand how to research 3DVLEs, this article explores past research practices used in traditional classroom-based interaction studies to propose suitable methodological approaches for 3DVLE research. The investigation first compares the two contexts and describes interaction types; this is followed by a survey of classroom-based interaction studies in the traditional classroom. Then, as a comparison, the author surveys research methods used in a sampling of 3DVLE studies. To conclude, the author highlights the implications and research considerations for future design and research of 3DVLEs.

What the researchers did
The article surveys relevant literature in order to:
- Describe differences between physical and virtual classroom contexts;
- Classify the types of interaction reported in second language studies;
- Provide a historical overview of research approaches and methods used in second language interaction studies;
- Survey a sample of classroom-based interaction studies in traditional second language classroom contexts and a sample of studies from 3DVLE classroom contexts.

What the researchers found
- The classroom is typically described as a context in which the learner interacts to achieve a desired learning outcome. These interactions are observed to better understand the learning process. However, the types of interaction in a 3DVLE classroom differ because of how the learner interacts with and in the online space.
- Traditional classroom-based interaction studies include these types of observable interactions: teacher-learner, learner-learner, and learner-text. The article stresses the importance of learner-space as a fourth type of observable interaction in future 3DVLE research.
- A historical overview shows that observation is a long-standing practice for classroom-based research, although research perspectives have shifted from mostly quantitative (in which learning outcomes are measured and counted) to more of a mixed-method, which means that the process of learning and types of interaction are described qualitatively in order to better understand how if language learning is successful based on measurable outcomes, like vocabulary acquisition or use.
- A review of interaction in second language studies in physical classroom shows that observations, journals, field notes, interviews, questionnaires, etc. are commonly used in conjunction with pre- and post-test results. These studies typically consider oral language production used and observed in the process of task completion. However, research in the area of 3DVLEs also investigates the users’ movements/actions in the space to better understand how task design and affordances of space contribute to social interaction and learning. Recorded observations of interaction between the learner and the space capture the complexity of 3DVLEs used in language learning and teaching.

Things to consider
This article is not a typical research study, but rather a survey of literature that will help guide future researchers in designing studies to better understand whether and how 3DVLEs promote and facilitate interaction, thus promoting language learning. Future research in the area of 3DVLEs should include:
- Recordings of user interactions and behavior - screen capture technology will provide rich data for qualitative analysis;
- Data analytics - 3DVLE platforms/software often have the ability to capture frequency and location of interactions through data analytics for quantitative analysis (in addition to learning achievements as measured by tests).
- Interaction type, location in space, time spent in space, and task types are important considerations for future research.


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