Games for Learning:
Are Schools Ready for What's to Come?

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Abstract

Leona Huggins knew something was not quite right when she pulled her two boys away from a favourite computer game to do their homework.

"There was a lot of deep-level thinking going on. Then I'd have to say, 'OK, stop. We have to do your homework. We have to study your spelling words,' " Ms. Huggins said. "I had to interrupt what I thought was deep-level thinking for homework that I didn't think was."

Ms. Huggins, a Vancouver kindergarten teacher and mother of Sean, 6, and Jeffrey, 11, is part of a new generation of parents and educators pushing to bring digital games into the classroom.

Excerpt from "The Learning Game:
A New Generation of Parents and Educators Wants to Bring Digital Games into the Classroom"
(Schmidt, 2004)

Leona Huggins is certainly not alone. A growing number of teachers, parents and researchers are becoming involved in examining and promoting the viability of computer games, including commercial, off-the-shelf (COTS) games, for academic and social learning in school settings. Marc Prensky, among others (Beck & Wade, 2004; Prensky, 2001b) suggests that today's youth are fundamentally different from the baby boomers in the ways they work and learn as a result of their exposure to games. Even if games have not become part of *our* culture, they are certainly part of *their* culture (Fromme, 2001). Many have suggested we can use these games to teach valued curricular outcomes (Gee, 2003; Papert, 1998; Prensky, 2001a; Squire, 2003), and some have started to do (mostly) small scale studies (Squire, 2003). The study of computer games for learning is a relatively new field, and much basic research remains to be done.

Purpose

The present study proposes to address a gap in our current understanding about the status of digital game use for learning in public school classrooms. This study asks classroom teachers about their use patterns and attitudes towards the use of computer games in the classroom, and the factors that facilitate or prevent the use of games for learning. For those teachers who are and who are not using games, the study will seek to discover what barriers exist.

At the time of this writing, there is still little data on the use of commercial games in classroom settings. This study forms part of the required body of knowledge on the use of games for teaching and learning in public school. The given work is a pilot study, since few studies of this nature have been reported in the literature (Can, 2003), and this study could serve as a template for further studies. With a sufficient number of respondents, we can begin to develop a picture of what subjects and grades might be most amenable to the field-testing of games for learning. On the other hand if respondents report that they would be willing to try but don't know how, then this information can be used to support future work in professional development or in-service sessions for teachers. Identifying barriers to the adoption and integration of digital games for learning can also be helpful for discerning possible ways to address organizational, technological and philosophical challenges to this pedagogical approach.

The second phase of this research will focus on classroom-based field research with teachers and students who are using digital game based learning approaches in the classroom. However, before conducting in-depth case studies as identified by Squire (2004), it is necessary to discover who would be willing to try using such a game in their classroom, as well as who, if anyone, is already doing so. Our approach to testing COTS in the classroom will proceed differently if lots of people are already using them, than if no one is using them, and differently again if no one **will** (i.e. no one is even willing to consider it). Our initial survey results will give us vital information on how to proceed with the second phase of our research. In the latter case, if few teachers are willing to use games

for learning, the next step would be a further investigation of why and what, if anything, they **would** be willing to try.

The primary goals for the first phase of our study are to determine who is using games in the classroom and who might be willing to try. A tertiary goal is to compare the respondents' comfort level with technology with their willingness to use games in class as it is expected that a significant relationship exists. Addressing the one may help advance the other.

Procedures

The outlined study targets all classroom teachers in all possible area K-12 schools to determine the current status of digital game use for learning in the classroom. Both a paper and an on-line version of the questionnaire will be available. The necessary permissions are currently being sought. The 25-item questionnaire has been specifically designed for the given study in order to be easy for users to answer and submit, and to ensure the maximum possible response rate. The questionnaire contains mostly multiple choice style questions, but space is provided at the end for additional comments.

The questionnaire will be distributed in January 2005 and the analyses are expected to be complete by the end of February.

Analysis of Results, and Limitations

Some of the values will be used to compute two new scales: "Technology Comfort Level (TCL)", and "Games Readiness (GR)". The Technology Comfort Level will be computed from the "technology use" survey items, and the Games Readiness value will be computed from the "games for learning" survey items. Although this survey is primarily exploratory in nature, with sufficient responses, it will be possible to group the data into various categories, and to use these groups to test a number of secondary hypotheses using inferential statistics. Primary categories of interest could include: grade level, subject taught, and these can be compared against the two computed variables: technology use "comfort level' (TCL), and readiness to try games (GR).

Results may not be generalizable until other, similar studies have been conducted in other locations. Since the questionnaire is voluntary, it will not be possible to determine if the results are truly representative, as some self-selection is expected. In particular, teachers more interested in the subject matter are more inclined to respond. Thus, a high value for teachers willing to try games may not necessarily be generalizable to the entire local population. Teachers who avoid using the computer may simply not participate in the survey. However, a high value for 'willingness' could be used to justify further investigation of a form that would ensure participation.

Expected Results

The expected results from the primary goals of the study are that most teachers have not tried games, but some would be willing. Others still would be willing if various barriers were alleviated or removed. This would be the minimally acceptable result.

Secondary results will help to describe the local landscape with respect to readiness and willingness to test games as learning tools. It is expected that teachers who are comfortable with technology may be more willing to try games than those who are not currently using the computer much in the classroom. It stands to reason that teachers who avoid incorporating technology into their teaching may also be reluctant to incorporate games, although there is no current data to support this belief.

The proposed study is part of the necessary work involved in creating baseline values, and it is likely to provide much data that can be used to inspire further studies, both locally, and internationally.

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