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Design considerations in game dashboards for teachers

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Abstract

Many current data dashboards about educational games have failed to capture teacher needs and gain widespread use in the classroom as an assessment tool. Drawing on results from an in-depth session with teachers and Edtech providers, we will present key points about how dashboards can be used to meet specific teacher needs most effectively. We will also share how those key points relate to BrainPOP, Learning Game Network and Classroom Inc.'s own game dashboards and plans for improving them.

Introduction

Many current data dashboards for educational games have failed to capture teacher needs and gain widespread use in the classroom. At the same time, embedded assessment and data capture from educational games and other complex tools is on the rise. As more data becomes available, we need to get better at making sense of it, and that sense-making activity needs to be informed by teachers. But it's not exactly clear what issues data dashboards should solve, and subsequently, what data and design will help solve those issues.

Dashboards play an important role in connecting game design to assessment design to teacher needs. Designing effective game assessments is a challenging problem that has received a lot of attention at conferences like GLS in the past few years. But formulating a valid and reliable game-based assessment metric does not guarantee that the metric will have utility in classroom practices. Equally important for changing classroom practices is effectively visualizing assessment data into a clear and actionable graphics for teachers. In many ways, "data" is one of the biggest current buzzwords in education, but many teachers may be unequipped to effectively use data resulting from educational technology products. This may be in part caused by poor or non-existent teacher training in educational data, but also in part caused by poor dashboard design by those that make educational games and game-based assessments (Gates, 2015).

At this year's SxSW Edu conference, we organized a "Problem Solvers" session dedicated to better understanding the design challenges around making teacher dashboards for educational games. In this session, we used a group brainstorming activity to generate design prompts for game-based dashboards, followed by a "dashboard critique" in which participants critiqued the design of the presenters

dashboards using the results of the brainstorming process as a framework for the critiques. The attendees in the session included a mix of current teachers, former teachers, administrators, and EdTech providers. In fact, the number of EdTech providers outnumbered the teachers in the room, indicating that this issue is an industry-wide concern. The brainstorming process thus captured the collective consensus from both practitioners and designers on the design prompts that should guide the development of teacher dashboards.

We analyzed the results of the SxSW brainstorming and critique process, and published the results in a whitepaper (Duncan et al. 2016). In this GLS panel, we plan to share the results of the SxSW panel, and engage the audience in discussion of those results. In particular, we will focus on summarizing the SxSW participant's responses to the following questions:

- What questions do you want to answer with a dashboard?
- What actions do you want to take with that information?

Some of the key points that emerged from the responses include the categories of: "Next Steps", "Content Mastery", "Interventions", "Participation/Engagement", "Content efficacy", and "Progress in the Game". In the dashboard critique, each organization's dashboard had a unique set of critiques that bridged multiple categories listed above, but the one category that consistently appeared in all three organization's critiques was "Next Steps."

All three panelists come from organizations that design, develop, and distribute educational games. In addition to discussing the results of the brainstorming process, we discuss how the teachers' feedback has been applied to our own dashboards and plans for improving them. This will naturally lead into issues about how standardized or unique each game's dashboard should be, and what aspects of a game should be captured in a dashboard. In this way, our own game dashboards will be provided as a concrete case study for how these principles could be applied to the community at large. Additionally, we hope that the results presented in this panel and whitepaper can act as a useful framework to guide future research into what dashboards designs are most effective at empowering teachers and transforming classroom practices.

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References

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