yoU Make It GO!: Mathematics at Play

The UMIGO Partnership:
WTTW Chicago, DHX Media, the Michael Cohen Group, & the Children's Museum of Manhattan

Abstract: The UMIGO partnership has the goal of increasing the numeracy acquisition, mathematics achievement outcomes, and digital competency of six to eight year-old children from low-income families. To achieve this goal, the partnership will deliver effective mathematics curriculum in the form of transmedia storytelling and activities. The partnership will provide corresponding support materials and digital resources to parents, caregivers, and teachers. The use of scientific research will allow the UMIGO partnership to establish strong evidence of the intervention's educational effectiveness and determine new measures of student performance outcomes relevant for new media learning.

UMIGO Project Overview

Developed under a five-year *Ready to Learn* grant from the U.S. Department of Education, UMIGO will encourage children to design, build and create. Michael Polis, the project's creator, explains the idea behind UMIGO this way: "When we were kids we were inventors. We thought of crazy ideas for all sorts of amazing things we wanted to make! With scraps of wood, extra screws, string, and tools from Dad's toolbox, we made things-things that were practical, that solved everyday problems...and when using our imaginations, we built fantastical things…Kids today are the same. With the proper tools and a bit of guidance, kids today can (virtually and literally) create things we could have never even imagined. At the same time, they can learn math principles by doing and making."

There are multiple entry points into the world of UMIGO, including computers, touch-screen devices such as tablet computers and smart phones, print and digital books, board games and playing cards. The world of UMIGO is not just one place, but many places where children can learn, build and share. Through a variety of activities, children will use various mathematical skills to design clothing, "mash-up" their own musical beats and create songs, produce their own virtual mazes as video game "levels," and create their own magazines and videos to share with others.

Based in empirical research, the UMIGO world will utilize developmentally scaffolded curricula in which mathematical concepts are introduced and utilized across multiple platforms with increasing complexity so that proficiency is attained. UMIGO's adherence to the Common Core Standard for Mathematics released in June 2010, will promote mathematics achievement across multiple platforms: websites, mobile phones, handheld games, television/DVDs, books, and audio formats, allowing each platform to do what is does best- present stories, change attitudes and influence behavioral outcomes through increasingly complex interactions.

Using children's natural inclinations to embrace digital media in its multiple forms, project UMIGO will utilize transmedia storytelling to "help transform children from bored, reluctant learners...to excited engaged, and creative" learners of today and the workforce of tomorrow (Gee & Levine, 2009).

Family, teachers and community are important in young children's learning. Through its outreach partnerships, project UMIGO will develop and provide training materials and digital resources for families, educators, and caregivers to help ensure that research-based mathematics instruction is infused into all aspects of children's UMIGO media activities.

Ensuring effective interventions mean utilizing rigorous measurement tools. Much of the existing literature related to children's learning and media is focused on formative stages of media product development. Formative research has been useful in assessing specific learning from children's media among small populations of children (Fisch & Truglio, 2001), identifying the most effective ways to convey educational messages in children's television shows (cf. Cohen and Rosen, 1992: Tobin and Cohen, 1997), or in the assessments of overall comprehension (cf. Trulio, Scheiner, Segui and Chen, 1999). However, there has been less research using large-scale measures to identify outcome generalizability to large populations, or summative research conducted using a scientifically based research design.

Even when outcomes are measured, there is little attention to the mechanisms (Valkenburg, 2001). Most media research has studied the impact of messages mediated through television, with far less attention to how children receive, evaluate and learn from newer media platforms. Moreover, transmedia storytelling has only recently

emerged as an area of social scientific study (Jenkins, H., 2006). Project UMIGO will contribute significantly to this body of research while forging new ground by assessing media platforms both individually and collectively as a transmedia experience.

References

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