A growing body of research suggests that computer games can help players learn to integrate knowledge and skills with values in complex domains of real world problem solving. In particular, research suggests that epistemic games—games where players think and act like real world professionals—can link knowledge, skills, and values into professional ways of thinking. Here, we look at how the epistemic game Urban Science develops civic thinking in young people as they learn about urban ecology by role-playing as urban planners redesigning a city. Specifically, we ask whether and how overcoming authentic obstacles from the profession of urban planning in the virtual world of a role-playing game can link civic values with the knowledge and skills young people need to solve complex social and ecological problems—and thus be a powerful context for learning civic thinking.

Keywords: civic thinking; epistemic gameplay; Urban Science game;
tionships among people and places that provide critical context for world events” (The National Geographic Education Foundation, 2006, p. 7). One-fifth of Americans cannot even locate the United States on a world map—a statistic that led a recent Miss Teen USA contestant to suggest that geographic illiteracy is so pervasive because “U.S. Americans… don’t have maps.” (Adams, 2007)

But the problem is not that U.S. Americans lack maps. Nor is it even that young people cannot locate the United States on a world map, depressing though that may be. Rather, the problem is that our public understanding of what it means to be geographically literate equates geographic thinking with the ability to locate places on a map. Questions like this focus solely on knowledge: bits of information disconnected from any meaningful context.

Of course civic thinking does require knowledge of social, economic, and ecological—and, yes, geographic—information. But as Ehrlich (2000) argues, civic thinking means more than just recall of isolated facts. Solving civic problems requires putting knowledge in the context of real world skills and in the service of civic values that create a democratic republic (Ehrlich). Developing civic thinking requires learning opportunities where the use of knowledge and skills are guided by civic, social, and ecological values.

A growing body of research suggests that computer games can help players learn to integrate knowledge and skills with values in complex domains of real world problem solving. (Adams, 1998; Barab, Hay, Barnett, & Squire, 2001; Gee, 2003; Shaffer, Squire, Halverson, & Gee, 2005; Starr, 1994) In particular, research suggests that epistemic games—games where players think and act like real world professionals—can link knowledge, skills, and values into professional ways of thinking (Shaffer, 2006a). To establish these links, epistemic games present players with the same meaningful obstacles that professionals-in-training face and give players a chance to reflect on those obstacles with more experienced mentors.

Here, we look at how the epistemic game Urban Science develops civic thinking in young people as they learn about urban ecology by role-playing as urban planners redesigning a city. Specifically, we ask whether and how overcoming authentic obstacles from the profession of urban planning in the virtual world of a role-playing game can link civic values with the knowledge and skills young people need to solve complex social and ecological problems—and thus be a powerful context for learning civic thinking.

THEORY

Ehrlich (2000) argues that civic education has two distinct, but related, parts: civic engagement and civic thinking. For Ehrlich, civic engagement is “individual and collective actions designed to identify and address issues of public concern” (2000, p. xxvi). Activities that impact and strengthen the community—such as volunteering at a soup kitchen or picking up trash on Earth Day—are important components of civic education. But, according to Ehrlich, the civic thinking that develops from such activities is what creates a long-term commitment to civic engagement. Civic thinking prepares people to participate in their communities.

For Ehrlich (2000), civic thinking is composed of three separate, but interrelated elements: knowledge, skills, and values, or as he describes it, “mutually interdependent sets of knowledge, virtues, and skills” (2000, p. xxvi). Knowledge of civic thinking, in this sense, includes understanding the institutions and the processes that drive civic, political, and economic decisions in the body politic—including understanding how a community operates, the problems it faces, and the richness of its diversity (p. xxx).

Ehrlich writes that the skills of civic thinking are essential for applying this knowledge to solve civic problems (p. xxvii). Civic skills include: communicating clearly, orally, and in writing; collecting, organizing, and analyzing...
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