Designing and Analyzing Social Dynamics for Collaborative: Environmental Didactics

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ABSTRACT

The negotiation-oriented and partly web-based game “Surfing Global Change” (SGC) produces characteristic collaborative behavior in student groups. Its social dynamics were statistically analyzed with sets of university students in Austria. The architecture of SGC was already explained in other articles and gives a framework for “game based learning” along five interactive game levels: 1) learn content and pass quizzes; 2) write and reflect a personal standpoint; 3) win with a team in a competitive discussion; 4) negotiate a complex consensus between teams; 5) integrate views when recognizing and analyzing long-term global trends. This paper provides correlation analyses of parameters that describe student activities in a web-based space of interaction that intends to introduce collaborative behavior. The conclusion of the statistical analyses suggests that the set of SGC game rules acts as a boundary condition for expected processes of social self-organization. Interest in a good grade (= function of collected rewards) in this sense steers team size, work attitude and individual affinity for sticking to personal convictions. Rules trigger two distinct processes: social dynamics in the class and the striving for grades for the course; these targets do not necessarily match.

Keywords: Austria, Collaborative Behavior, Student Activities, Surfing Global Change (SGC), Web-Based Space

1. PROCEDURES AND DEVELOPMENTS ALONG THE FIVE LEVELS OF SGC

1.1. A Symbolic Time Plan for the Game SGC

Implementations of the game SGC (see Ahammer, 2004a, b, 2005, 2013; Öttl et al., 2014; Vogler et al., 2010; Lehner & Wurzenberger, 2013; Altmann et al., 2013) in dozens of courses to date have followed the temporal organization of the scheme as notated in Figure 1 (Ahammer, 2016). The shape of the different symbols explained in the legend describes the dramatic characteristic of the single activities involved. Each phase starts with its preparation (triangle). The reason for the overlapping of the five phases is to enhance understanding of the interconnections between the levels and to allow students to ponder about their future tasks at an early stage.
1.2. Processes of Self-Optimization Planned to Steer Social Dynamics in SGC

This article builds upon earlier publications and reflects how the set of rules contains self-optimizing subsets that are eventually more capable of steering learning processes than mere commandments. Experience from the game’s implementation shows that different student groups
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