Designing Environments to Encourage Collaborative Creativity: Two Case Studies in Higher Education

Abstract: Collaborative creativity often is lacking in university learning, despite its relevance to the 21st Century workplace. We describe two case studies of designed environments to teach collaborative creativity, along with the successes and challenges that we found in each approach. Overall, we found both environments, though different, to foster collaborative creativity, while there are still areas for improved instruction.

Teaching Collaborative Creativity to University Students

There is a modern emphasis on creativity—evidenced in part by a 68.3% increase in the level of patent applications from 1996-2001—that has led our emerging society to be called the "creative economy" (Banahan & Playfoot, 2004) where creative skills are critical to job and business success (Ogunleye, 2006). There is an additional emphasis on collaboration in the creative process, as this is the "secret to breakthrough creativity" and "group genius" (Sawyer, 2008, p. 3). Some researchers have found that collaborative creativity can be effectively taught in higher education. For example, Hokanson (2006) found that students who received creativity instruction improved their creative thinking. Ginamarie, Leritz, and Mumford (2004) reported in their meta-analysis that well-designed creativity programs produced performance gains. Driver (2001) argued that creativity education could be effectively integrated into business education. Finally, Cole, Sugioka, and Yamagata-Lynch (1999) found that supportive classroom environments promoted more creativity in higher education. However, higher education systems still often lack quality instruction in collaborative creativity. Ramocki (1994) argued, "we must be concerned with how creativity operates within groups" (p. 17) but lamented that marketing education has neglected the teaching of essential group creative skills.

Research Questions and Methods

The purpose of this research agenda was to analyze two examples of how collaborative creativity might be taught in higher education. Specifically, the research questions for this study were:

1. How well did each instructional experience assist students in learning to develop collaborative creativity?
2. What shared principles might be extracted from both contexts to inform the effective teaching of collaborative creativity in higher education?

Research Design and Participants

This study compared two case studies from two different settings. The first setting was a Design Studio for graduate-level instructional designers, occurring winter semester 2009. This Studio consisted of three courses with high levels of student collaboration within and between the different courses. Students were directly taught creativity principles during one class period, and then implicitly encouraged to be creative through faculty mentoring and the open and shared nature of the Studio community and class assignments. Four participants were selected as representative case studies from the Studio setting. The second research setting was an Innovation Boot Camp for technology and engineering undergraduate students. The Boot Camp was an intensive one-week experience where students from different departments were explicitly taught group problem finding, brainstorming, convergent thinking, prototyping, and other activities key to group innovation as they developed solutions to problems they identified in their community. This camp was repeated once a month over two semesters with 10-30 new students each time.

Data Collection

A combination of methods were used to explore the nature of the collaborative creativity process within the Studio community. In studying the Studio, we followed Seidman's (2006) strategy for phenomenological interviewing, except for one modification. In Seidman's process, the first interview is designed to understand the participant's background relevant to the experience at hand; the second interview asks for specific details about the experience itself, and in the third interview the participant and researcher co-interpret the significance and meaning of the experience. We conducted the first and third interviews, and in lieu of Seidman's second interview, we collected weekly 5-10 minute voice memos from the four participants. This provided more specific details of how their ideas developed through weekly group collaboration. This information was triangulated with an analysis of the students' weekly design journals and through first-hand observation.

In studying the Boot Camp, we observed and video-recorded several of the groups in each iteration. We also collected pre- and post-participation survey data about their learning outcomes and the emergence of creativity and community-related elements in their groups. Survey items related to creativity were drawn from the literature and an innovation process developed by the instructors. Items related to the emergence of

community were drawn from Rovai's (2002) Sense of Community scale and Anderson and West's (1996) innovation climate instrument.

Data Analysis Methods and Rigor Guidelines

Qualitative data were analyzed using constant comparison coding techniques for forming categories and theories derived from categories. Trustworthiness was developed through member checking case study reports with the participants, asking independent coders to analyze uncoded portions of the data to confirm emerging themes, peer review of the theoretical and methodological frameworks, and the use of multiple data sources.

Findings

Several positive outcomes were found in the design of the Studio. Students reported a high sense of community (50 comments), and collaboration (173 coded comments). The students also reported that a high percentage of their creative ideas coming through interactions with other people (78% of total new ideas identified). Interestingly, the students reported learning not only from being critiqued by their peers but in giving critiques and assistance as well. While this data indicated some success in fostering collaborative creativity, challenges from the Studio setting included an overt focus on task completion and grades rather than creativity, a lack of time and prerequisite skills for developing and implementing ideas, and superficial collaboration in the community at large (outside of a tight peer group).

From the surveys about the Boot Camp, we discovered several positive outcomes. These surveys were reported on a 7-point rating scale, with 7 representing the strongest level of agreement. Students reported high levels of community within their groups (5.5 average), innovation team climate (5.6) and a perception that the Boot Camp successfully taught them principles of creative thinking (5.8). We are currently analyzing the video and observational data to understand why these trends existed in the survey data, as well as to better understand the process of idea generation and development within the groups of the Boot Camp.

Implications for Creativity Instruction in Higher Education

As Greeno (1997) said, we need to understand "which combinations and sequences of learning activities will prepare students best for the kinds of participation in social practices that we value most" (p. 9). Because collaborative creativity is crucial to our students' success in the workforce, understanding how collaborative creativity can be successfully fostered in successful higher education experiences is critical.

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