The Affect Team Learning has on Creativity in a College Classroom Environment

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Keywords: Creativity, design, teams, college

Today's college graduates enter into a world constantly presenting them with "problems" that do not have simple solutions. They must be able to work either independently or with other people to survive, and as Donnelly (2004) stated, when learning is presented in a social environment where conversations between learners can take place, learning can flourish. The typical design student works independently in educational classrooms with very little conscious feedback or interaction from their peers. Yet the business environment expects them to engage individually and in groups. Teamwork has become an even more important part of the organizational structure, especially as businesses use cross-functional teams to improve their effectiveness in the marketplace (Thacker & Yost, 2002). Further supported by Karpova, Marcketti, and Barker (2011) they noted the complexity in our global environment is increasing and today's graduates need to be prepared for the work environment they are about to enter.

The social approach to creativity originally involved three themes: (a) person, (b) product, and (c) process. In 1961, Rhodes added a fourth "P", press or environment, to the preexisting three P's. Since that time, creativity has increasingly been seen as a social phenomenon. Working on this premise, Vygotsky (1978) noted learners are motivated by the extrinsic rewards received from the knowledge community and through the intrinsic motivation of their internal drive to understand and promote the learning process. He went on to say in social constructivism, or team learning, requires learners to develop teamwork skills and to see how their individual learning relates to the success of group learning. *Using the framework of social constructivism, the goal of this study was to explore how the four themes (person, product, process, and environment) influences and impact on the triadic relationship between the creative and design processes, the team learning environment, and on the projects produced in college classrooms.*

Methods. Data were collected from female undergraduate students in a Family and Consumer Science Department at a Southern university with a declared major in apparel design or merchandising. The first sample consisted of 10 upper division students. The second sample consisted of 10 lower division students. Using a randomization process, the sample groups were further divided into two subgroups, five in the control (independent) and five in the treatment (team) group. All groups produced three in-class projects during one semester.

To enhance the internal validity and reliability, triangulation was used to collect the data. Quantitative data were collected using two methods. The first came from the pre and posttests of the Torrance Tests of Creative Thinking (TTCT), which consists of five norm-referenced assessments (fluency (number of responses), originality, elaboration, abstractness of titles, and resistance to premature closure). The assessments from the TTCT were individually analyzed using the Wilcoxon signed-ranked test. The second quantitative assessment came from the project evaluations received from three independent design professionals. Analysis of these results was done using the Friedman test, a nonparametric test. Each professional used a created

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rubric that had a scoring scale of 0 - 5 to evaluate the aesthetic quality and creative execution of the projects produced. A probability level of 0.05 was used in both the Friedman and the Wilcoxon tests. Qualitative data were collected through classroom observations, individual face-to-face interviews using semi-structured questions, and journal entries from each participant.

Results. Qualitative analysis indicated 100% of the upper and lower divisions believed team learning stimulated and expanded their creative thinking process, provided a broader design perspective, reduced personal tunnel vision, and helped develop more of a "possibility thinking" mentality. 50% noted personal development in their listening, articulation, and visualization abilities. 50% of participants from the control group said feedback was important when looking at the aesthetic qualities of the design and 70% from the treatment group indicated an improved ability to give constructive criticism, to use and apply fashion terminology, and greater accuracy and confidence when discussing the aesthetic qualities of a design. 90% of students from the treatment group indicated they felt more proficient in obtaining information from team members by using clarification questions such as "what if" and "how" questions. This same group stated instructors needed to actively encourage creativity by asking questions that stimulate students' thinking. Intrinsic motivation within teams was higher and they found it a supportive experience to have a specific group to discuss "problems or design challenges" with. The research also indicated the longer the teams were together the more successful the collaborative team effort and the more the individuals' creative thinking process developed. Lower division students were more receptive to collaborative learning, suggesting beginning this process as early as possible.

Quantitative analysis showed the lower division had higher median scores compared to the upper division, suggesting keeping teams together longer can be more successful. P-values for the lower division were very close to having a significant difference to the upper division; indicating the sooner students get involved with teamwork the stronger their acceptance to this learning format. Finally, the significant difference between the lower division control / treatment group on the fluency assessment from the TTCT, may be because the lower group was less inhibited in their perceptions and the individuals' ability to articulate creative responses increases with quicker exposure to creative thinking. This study supports team learning does have an affect on creativity in a college classroom.

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ITAA Proceedings, #74 – www.itaaonline.org