



CREATIVE COLLABORATION IN ONLINE COMPUTER-SUPPORTED COLLABORATIVE LEARNING

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Abstract

Creativity is a key competence for facing the society challenges of the post-industrial knowledge society (Garrison, 2011). Despite the importance of collaborative learning in the 21st society (Bates & Sangrà, 2011; Hesse, Care, Buder, Sassenberg & Griffin, 2015), creativity in educational settings has been mainly analysed individually. Moreover, the collaborative aspects of creativity have been not developed in the context of online collaborative learning (Romero, Hyvönen & Barberà, 2012), despite being a part of the 21st century skills. There is also a lack of assessment methodologies for the collaborative creative assessment (Wishart & Eagle, 2014). This study aims to contribute to the analysis of creative collaborative learning in online distance context through the conception and analysis of the Assessment Scale for Creative Collaboration (ASCC). The scale is evaluated in the context of an online learning course on Creativity in Advertisement in the virtual campus of the Universitat Oberta de Catalunya (UOC) in Spain.

Introduction

The changes produced in the world in recent years have made it necessary to consider creativity as a strategy for enabling future citizens to succeed in an increasingly complex world (Rogers, 1954; Wang, Schneider & Valacich, 2015). For this reason, creativity has been defined as one of the strategic learning objectives in education in recent years (Voogt & Roblin, 2012). Formal education from primary to post-secondary education has stressed the relevance of developing the creativity of their students. In primary education, a survey of European teachers carried out for the European Commission concluded that creativity must be seen as a fundamental competence to be developed at school (Ferrari, Cachia & Punie, 2009). Moreover, creativity has been identified as one of fifth most important skills for the 21st century education based on the analysis of the most used 21st century skills frameworks (namely: P21, ENGAUGE, ATCS, ISTE, OECD, CASE) developed by Voogt and Roblin (2012). These authors identify the skills included in these different frameworks and then categorized the skills according to their shared presence. The creativity skill is present in the majority of the 21st century skills frameworks, and has even considered by some authors as a meta-skill (Kickmeier-Rust & Albert, 2012). For D'souza (2011, p.281) creativity is an ensemble of skills which emerges in a certain context, and "creativity, as different

combinations of skills may lead to different creative design products” In this study, creativity will be considered the generation of ideas that are original, valuable or useful (Sternberg & Lubart, 1995). For years, creativity has been conceived as an individual trait, but also as a process and the product of the process. In this paper we consider creativity from a socio-cognitive viewpoint as both an individual and shared process. We also define the concept of creativity individually and collectively, before considering the importance of collaboration in the creative process.

Creativity in Higher Education

Creativity as a social and cultural process and product is not merely an isolated original act or idea. Creativity is considered in this study before and beyond (and often without) the ‘Eureka moments’ concept, where a great breakthrough occurs (Shneiderman, 2000). Creativity is a context-related process initiated in a certain context and prior knowledge, where a solution is individually or collaboratively (co)constructed and considered as original, valuable or useful by a group of reference. Creativity output may result in an act transcending the creativity creator and producing changes in an existing domain or a new one (Sak & Oz, 2010). The importance of the usefulness of the ideas or acts that are considered as creative is highlighted by Franken and Bauers (2002). This author considers “creativity as the tendency to generate or recognize ideas, alternatives, or possibilities that may be useful in solving problems, communicating with others, and entertaining ourselves and others”. Creativity is no longer considered a mysterious breakthrough, but a process happening in a certain context as a process which can be fostered (Birkinshaw & Mol, 2006). Rogers (1954) focus on the inner conditions to foster creativity such flexibility, tolerance of ambiguity and certain “ability to toy with elements and concepts” (p.255). In academic settings, Silver (1997) propose to increase creativity in problem-posing and problem-solving among their undergraduates through fostering “the core dimensions of creativity: namely, fluency, flexibility and novelty” (p.75). In recent years, the increase of innovation and productivity needs, the teamwork and project oriented workplace has underlined the relevance of the collaborative creative process in the contexts of group work. Creativity has been considered as a collaborative and situated process (Eteläpelto & Lahti, 2008) that could not be understood as an individual process. Technology has been seen as an opportunity to support creativity both in individual and collaborative modalities (Lambropoulos, Romero & Kommers, 2011) despite there not being an agreement on the impact that technology has on the development of the creative collaboration process.

Creativity as a collaborative process

The analysis of the creative process in the context of individual creativity is carried out using McFadzean’s creative continuum (McFadzean, 1998), which considers the different stages of the creative process of collaboration that could be applied both in individual and collective settings. The time factor and the time quality is an important aspect of understanding learning activities (Romero & Barberà, 2011), and especially in the creative process of collaboration. This study also investigates the students’ perception of creative collaboration and the contextual variables of interest. A first element analysed is the degree of perceived co-presence

during the teammates' task. The teammates' engagement perception is one of the main factors of students' satisfaction in collaborative tasks. If the teammates' perceived engagement could support the creative collaboration process, the students' perception of an imbalance in their teammates' engagement could make them feel frustrated by the collaborative activity (Capdeferro & Romero, 2012). Tolerance of ambiguity has been analysed as another of the factors related to creativity (Zenasni, Besançon & Lubart, 2008); the novelty of the creative solution implies a certain playfulness and acceptance of ambiguity in the creative process and outcome definition. The degree of disagreement or tension between the team members is also considered as one of the factors that could be involved in the teammates' creative collaboration. A certain degree of disagreement and tension could support the creative collaboration (Thomson & Perry, 2006). The Assessment Scale for Creative Collaboration (ASCC) (Romero & Barberà, 2014; Wishart & Eagle, 2014) has been developed to consider these different factors involved in the creative collaboration process. The ASCC has been created within the context of the CoCreat Lifelong Learning Project. One of the research objectives of this study will also be to analyse the reliability of the ASCC instrument in the analysis of creative collaboration.

Methodology

The study involved 64 online learners of the Bachelor's degree in Audio-visual Communication. The students were engaged in the course "Introduction to Creativity in Advertising". The task proposed to the students during the course was carried out in dyads. The students were required to develop a creative advertising project during 4 weeks. In terms of temporal resources, the task is considered as a long-term task [25] with a high institutional temporal flexibility [26]. The students were invited to answer the Assessment Scale for Creative Collaboration (ASCC) (Romero & Barberà, 2014; Wishart & Eagle, 2014) at the end of the creative activity.

Assessment Scale for Creative Collaboration (ASCC)

The ASCC aims to analyse the students' perception of creative collaboration and the contextual variables of interest, such as the degree of co-presence during the task, the tolerance of ambiguity, the interest in the task, the degree of disagreement or tension between the team members and the time pressure. These items were included in the first section of the ASCC as the general items. The second section of the ASCC aims to assess 24 criteria that have been related to the creative collaboration process of the learners. For each of the criterion the students should answer one or more specific questions on a scale between 1 and 7 according to i) how much it was present during their project (presence subscale) and ii) how important it was to their group's success (importance to success subscale).

Results

The preliminary objective of this study is the analysis of the ASCC developed for analysing the factors involved in the creative collaboration process. The analysis of the reliability of the analytical instrument “Assessment Scale for Creative Collaboration” shows a high Cronbach’s alpha ($\alpha = .833$) in the presence subscale and in the importance to success subscale ($\alpha = .892$), which leads us to consider this a reliable instrument for the self-assessment of the collaborative creative process.

In the general items, the Temporal Pressure is the variable with the lower mean for this subscale ($M = 4.89$). The results are significantly lower in women ($M = 4.8$) than men. ($M = 5.11$). All the other variables in these subscales do not show significant differences.

For the “Presence” subscale of the items in the creative collaboration process, there are four variables with very low means, all of them related to the use of certain modalities and technologies for supporting creative collaboration. The use of Second Life ($M = 2.78$), the Video Conference ($M = 2.53$), but also face-to-face discussions ($M = 2.8$) and the use of social networks ($M = 3.6$) are considered by the students as modalities and technologies of interaction that are not related to the creative collaboration. In these variables, the means are lower in men than women.

In the “Importance for Success” subscale of creative collaboration performance, there are also 4 elements with lower means in terms of the relation defined between these criteria and the success on creative collaboration observed by the students. The relation between the use of Second Life ($M = 3.1$), the Video Conference ($M = 3.28$), but also face-to-face discussions ($M = 3.47$) and the use of social networks ($M = 3.86$) are considered by the students as modalities and technologies of interaction that are not important for success in the creative collaboration task. There are two variables with significant differences between men and women, the frequency of fun ($p = 0.02$) and the frequency of trust ($p = 0.03$) for creative collaboration. In both cases, women consider the fun and the trust as more important than men.

Discussion and prospective

The creative process in collaborative learning should be analysed by considering the students’ experience in their creative process and their collaborative learning, but also by observing the creative process in time. McFadzean’s (1998) creative continuum is particularly suitable for observing the creative collaborative process in the dyads, allowing the completion of the information provided by the ASCC. Further research should allow for better characterisation of creative collaboration and control of time pressure to enable the influence of this temporal factor in the quality of the creative collaboration to be observed. Moreover, future research in the field of creative collaboration could contribute towards consolidating the mixed-method analysis considered in this study and consider not only the specific population of the online campus but also students in face-to-face universities.

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