Whose Line Is It Anyway? Open-mindedness and Collective Psychological Ownership in Collaborative Writing

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Abstract

Recent literature asserts that collaborative writing in online shared documents requires both open-mindedness to others' ideas and the development of a sense of collective psychological ownership toward a shared outcome. However, there is yet little evidence to support this assertion. Therefore, this study was set to examine the relationship between the two constructs - open-mindedness and collective psychological ownership and the extent to which this relationship is affected by the individual's technology expertise. The research applied the convergent mixed methods approach, using both quantitative and qualitative tools for data collection and analysis. Findings revealed a positive relationship between the two constructs and indicated that this relationship is stable beyond the individual's level of technology expertise.

Keywords: collaborative writing, collective psychological ownership, open-mindedness, technology expertise.

Introduction

Collaborative writing (CW) in online learning environments provides students with opportunities to think and rethink their views and knowledge in light of their peers' viewpoints. This process requires both open-mindedness to others' ideas and the development of a sense of collective psychological ownership toward the written outcome - the shared document. The present study focuses on the relationship between open-mindedness and collective psychological ownership, attempting to answer the following research question: whether and to what extent is there a relationship between the two constructs in CW process?

Writing documents collaboratively is considered to have a positive effect on learning as well as on socialization and creation of new ideas (Calvo et al., 2011). Lowry and colleagues claim that: "collaborative writing is an iterative and social process that involves a team focused on a common objective that negotiates, coordinates, and communicates during the creation of a common document" (Lowry, Curtis & Lowry, 2004, p.72). Following, a long list of challenges and characteristics that may influence collaboration and in it CW, has been identified in literature (Ede & Lunsford, 1990; Huxham & Vangen, 2006; Posner & Baecker, 1993). Some of these include diversity of experiences, social and cultural backgrounds, shared basic values, and open-mindedness to others (Hernández-Mogollon et al., 2010).

Open-mindedness is perceived as the way in which individuals, within the collaborating group, approach the views and knowledge of their peers, incorporate the beliefs that others' express, and recognize the value of the diversity of knowledge (Mitchell & Nicholas, 2006; Tjosvold & Poon, 1998). In other words, an open-minded individual holds a flexible approach to alternative views and perspectives, counter-evidence, or goals (Baron, 1991; Harding & Hare, 2000; Stanovich & West, 1991). This is especially valuable for educators who aim to prepare students to pursue inquiry, to be self-critical, and to learn from experience (Adler, 2004). In collaborative learning, open-mindedness is reflected in shared beliefs about how the collaborating peers

respond to the open sharing of ideas, and consider alternative positions of each other (Cegarra-Navarro & Sanchez-Polo, 2011; Hernández-Mogollon et al., 2010; Mitchell, Parker, & Giles, 2012).

Another challenge to CW is the issue of psychological ownership over the shared outcome concerning the individual sense of ownership that may be affected by a number of variables, such as the number of editing peers, the type of comments or rank of commentator (peer/supervisor) (Caspi & Blau, 2011). Psychological ownership is defined as "the state in which individuals feel as though the target of ownership or a piece of that target is 'theirs'" (Pierce et al., 2003, p. 86). Pierce and Jussila (2010) recently advocated a reconsideration of the sense of psychological ownership and its effects to be refocused on group-level. They introduced the concept of 'collective psychological ownership' whereby there is a collectively held notion of an 'us', and a collective sense that the target of ownership (shared document and collaborative outcomes) is collectively 'ours'.

The complexity of CW processes has been amplified as online applications enable real-time and synchronized editing among multiple collaborators. Among these applications, Google Docs is a prominent word processor that allows individuals to work on a common task without restrictions often imposed by traditional face-to-face contacts (Holliman & Scanlon, 2006; Perron & Sellers, 2011; Thompson & Coovert, 2003). Google Docs enables individuals and teams to write documents alone or together, simultaneously or asynchronously while preventing conflicting changes. Thus, serving as an online shared space to plan, draft, revise and produce a shared product (Chai, 2013). Auto saving of the document every few seconds, creates an automated revision history, of version changes. These features and others seem to call for an evolving culture of CW in which participation is reciprocal and synchronous. In the current study, the application served as a resourceful research tool for close examination of the collaborative process.

Research on CW in Google Docs has explored technical aspects as flexibility of use and usability (Calvo et al., 2011; Chu & Kennedy, 2011). Other studies explored facets such as: psychological ownership of writers, perceived learning, outcome quality, group discourse, and students' conceptions of online CW (Blau & Caspi, 2009; Chai, 2013). Nevertheless, as the possibilities of the application continue to evolve; many aspects are yet to be explored.

Method

The study was conducted as a mixed-methods research design (Creswell, 2014). This design was used for simultaneous collection and analysis of both quantitative and qualitative data, merging the two sets of results into an overall convergent interpretation. Following are the research tools and analysis process.

The open-mindedness scale was adapted from the Actively Open-Minded Thinking (AOT) scale (Stanovich & West, 1991; 7 items, α =.88). The items referred to two aspects: willingness to consider evidence contradictory to ones beliefs (e.g., "People should always take into consideration evidence that goes against their beliefs").

The collective-psychological ownership scale was adapted from Psychological Ownership Item scale (Van Dyne & Pierce, 2014; 5 items, α = .80), including items such as "the collaborative document represents me".

The adapted items in both scales were designed in respect to learning processes on a 1 (not at all) trough 6 (to a great extent) range. The overall reliability of both questionnaires in the present study was high (α = .84).

Open-questions online questionnaire included two questions, both asking to reflect over the possible attributes and pitfalls that were experienced in the process of CW. The analysis was conducted in an inductive approach including open coding, category creation, and abstraction (Elo & Kyngäs, 2007).

Online documents included the versions of sixteen shared documents, focusing on evidence for open-mindedness and collective psychological ownership. Each document included 20-to-26 versions, overall, 368 versions. Based on the literature review, and the data collected via the other research tools, a deductive content analysis was applied. The indicators to collective psychological ownership followed Pierce and Jussilas' (2010) concepts seeking for specific terms, (i.e. our, us, we) implying a sense of ownership regarding the shared documents.

The trustworthiness of the qualitative analysis was confirmed by inter-judge agreement. Three colleagues acted as independent judges, codifying the data, confirming agreement and discussing disagreement until consensus was obtained for above 90% of the categories.

Research settings and participants

The study was conducted in the setting of an online distance learning course on 21st century skills. The course included CW of a one-page shared opinion paper; and reaching an agreement about an educational dilemma (e.g. traditional vs. alternative assessment). The study included 73 teaching students specializing in science education (41%) or humanities (59%) in randomly assigned groups of three-to-five students. Most of the students were female (92%), ages 18 to 25 years (76%); about half (52%) asserted that they prefer to learn individually, while the rest (48%) preferred learning in a group.

Technology expertise was measured by four statements, reflecting low-to-high levels. A few students (6%) claimed that they are generally familiar with some of the technologies and will use them only if they don't have a choice. Others (38%) declared that they have certain experience, and that they will use technology if necessary. Almost half (47%) agreed that they are well familiar with advanced technologies and that it is important for them to learn and make use of new technologies. The rest (9%) stated that they are experts and have vast knowledge and skill in using advanced technologies for learning.

Results

In order to answer the research question, the means, standard deviations and Pearson correlation coefficient between the two constructs were calculated. The levels of open-mindedness and psychological-ownership were found to be moderate (M = 4.4, SD = .92 and M = 4.77, SD = .69, respectively). A positive moderate and significant correlation was found between open-mindedness and collective psychological-ownership (r = .33, p = .004), *with* 11% common variance (r^2). In addition, data indicated similar correlations between open-mindedness and psychological-ownership while controlling for technology expertise (r = .30, p = .009).

Content analysis of the open questions also revealed a relationship between open-mindedness and collective psychological ownership:

"During our discussions over the selected topic…we were open to each other's views, and thus we reached a significant and consistent conclusion that was expressed in our outcome" (Miriam).

"I needed to be open-minded in reading others' views of the dilemma and in the process of writing together… this helped me realize that the document did not belong to me, but to us, to the group" (Zoey).

In addition, this relationship was found even when the students' level of technology expertise was reported to be low: *"We all agreed on this dilemma. At first I was afraid of the collaborative writing task ...but with the new [to me] technology of Google Docs we worked together, shared opinions and each of us had a role in our Opinion Paper"* (Hanna).

The deductive analysis of the shared documents revealed similar evidence regarding the relation to open-mindedness and the sense of collective psychological ownership expressed in specific terms: **"I agree with you** that **OUR** idea"… "**WE thought** that…". Figure 1 presents a screenshot of an example of collective psychological ownership and its translation:

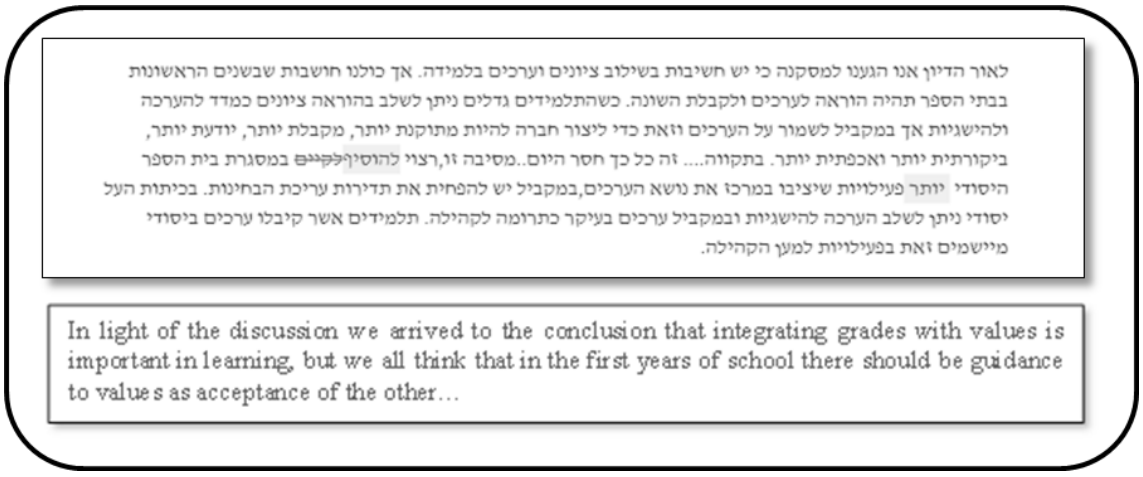

Figure 1. An example of collective psychological ownership and its translation

Discussion

The results of both the quantitative and qualitative analyses revealed a moderate relationship between open-mindedness and collective psychological ownership. The sense of collective psychological ownership seems to develop in CW in shared documents were students were exposed to other's ideas and the need to integrate their original views and knowledge with unacquainted peers in the process of CW (Levenberg & Barak, 2015). As far as we know, this relationship has not yet been researched before in general and specifically in online environments.

Moreover, the analyses revealed that this relationship is stable beyond the individual's level of technology expertise (Venkatesh, et al., 2003). It can be explained that students, involved in an ongoing process of CW in a shared online environment, are open to reconsider their original knowledge and ideas while exposed to other student's regardless of their level of technology expertise.

These convergent preliminary significant findings should be further explored in relationship to additional related constructs and in addition should be examined among larger populations of students.

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