# Assessing college students' sense of community for advancing community knowledge

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**Abstract:** This case study aims to examine students' sense of community (SOC) during online learning. Participants were college students data came from the "Classroom Community Scale" and students' online discussion in a platform designed based on knowledge building theory and pedagogy. The results showed that students were able to develop a strong sense of community and perceived learning as a knowledge creating endeavor as guided by knowledge building pedagogy.

**Keywords:** sense of community, knowledge building, online discussion

## 1. Introduction

Knowledge economy has accelerated the speed of educational innovation and reform that values collaborative knowledge creation more than individual knowledge acquisition. Knowledge creation or knowledge building (KB) is defined as a social process focusing on sustained idea improvement and on knowledge advancement as a collective endeavor. In a KB environment, students continually contribute, refine, and build on their ideas for advancing collective knowledge as a knowledge community (Bereiter & Scardamalia, 2014). Knowledge building is thus idea-centered (Scardamalia & Bereiter, 2006) and its community particularly highlights the importance of working creatively and interactively with ideas (Hong & Scardamalia, 2014), and members of the community are deemed as legitimate knowledge contributors for the overall achievement of group knowledge goals.

In a knowledge building community, how to develop a stronger sense of community (SOC), is important and remains a challenge, which has also received increasing attention from many educators. With stronger SOC, people can feel that they belong to a group or the greater community and those who are in the group or in the community can also better relate to each other with similar ideas or learning commitment. Stronger SOC also implies that community members can be more easily motivated to interact with other community members for sustained knowledge work that leads to the achievement of the community goals (Cacciamani & Perrucci, 2020). With increasing SOC, community members may also feel more psychological safe and thus are more likely to participate more in a more proactive manner. For students in a knowledge building community, SOC is therefore essential as it can foster a better class climate for collective knowledge creation. Accordingly, in this study, we engage students in KB activities, hoping that through various guided KB activities, students could enhance their SOC as a knowledge-based community.

## 2. Method

This case study adopted a mixed-methods research design to explore students' sense of community in a knowledge building environment. Participants were 21 college and postgraduate students taking a class titled "Study on Instructional Design of Educational Technology" in a national university in Taiwan. The course encouraged students to interact with one another and to contribute ideas to improve their assigned design projects. Two sets of surveys were administrated. One is a pre-established "Classroom Community Scale" (Rovia, A. P., 2020) which evaluates students' sense of community (in two dimensions

including awareness of connectedness and awareness of learning); and the other is "Types of Knowledge Community," which contains self-develop, open-ended questions to assess students' sense about three types of knowledge community (i.e., knowledge telling, sharing, and creating communities). Sample questions are such as: What is a knowledge community? What constitutes a good knowledge community? Data were mainly collected from online activities/discussion, and the above mentioned two surveys. A paired-sample t-test analysis was conducted to examine students' perceived sense of community (survey 1) and sense of knowledge community (survey 2). Z-test was executed to classify students' perception of knowledge community as knowledge-telling, knowledge-sharing, or knowledge-creating community.

## 3. Findings

As Figure 1 shows, about students' sense of community, first it was found the mean number of times from the pre-test to the post-test in the awareness of connectedness were from 2.88 to 3.46 (t=3.58***), and in the awareness of learning were from 2.76 to 3.53 (t=6.06***, p= .001). It shows that there were significant differences after one-semester's KB activity and students enhanced their sense of community in a knowledge building community. On the other hand, Figure 2, about students' sense of 3 types of knowledge community, it was found the mean number of times from the pre-test to the post-test in knowledge telling were from 1.89 to 0.58 (t=-3.842***). It shows that while there was no statistically significant difference in students' perception of knowledge sharing community and knowledge creating community, there was significant differences in the pre and post-test of students' perception of knowledge telling community. Figures 3 further shows social network analysis. It was found that interactions regarding students' ideas submitting, exchanging, and suggestions and elaborations for their design projects are very frequent and consistent. Finally, regarding types of knowledge community, it also indicates that students were more aware of the importance of knowledge community for knowledge creation in a KB community. Figure 4 also shows students weekly online activity performance.

Figure 1. *Students' sense of community in KB community;* Figure 2. *Types of knowledge community*
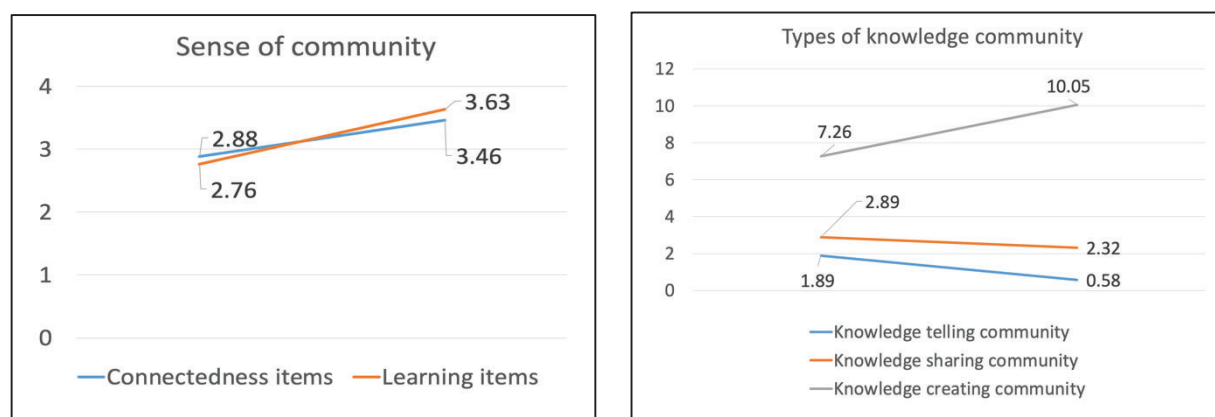


## 4. Discussion

This study investigated students' SOC after engaging students in an online knowledge building environment. It was found that first, the participants enhanced their SOC, both on the dimensions of "connectedness" and "learning"; second, regarding students' sense of 3 types of knowledge community, students tended to consider it as knowledge telling before the course but they changed to that of knowledge creating after the whole semester. To conclude, students enhance their SOC via KB and students were able to become more connected and interactive community to achieve community's learning goals. In sum, our study shows that working in a KB community makes it possible for student's developing a stronger sense of knowledge community (Bereiter & Scardamalia, 2014). While knowledge creation is meaningful for the future progress of human beings, SOC is useful for enhancing the goodwill to work collaboratively among members in a society that values group work more than

individual work. Although this study shows that SOC can be fostered through a KB learning environment, future discussion from different educational context and researches are needed to triangulate the findings in this study.
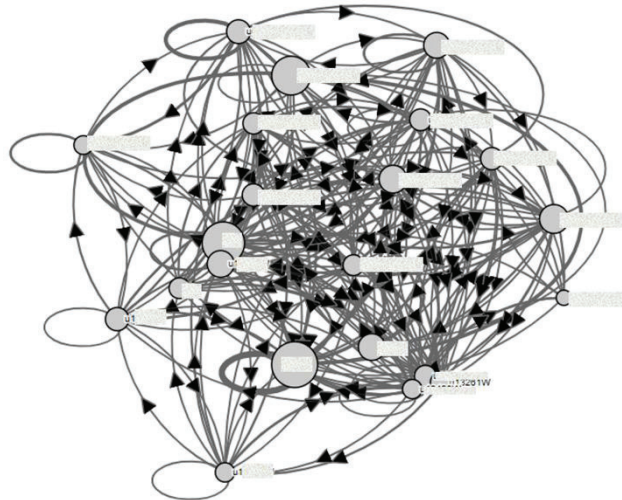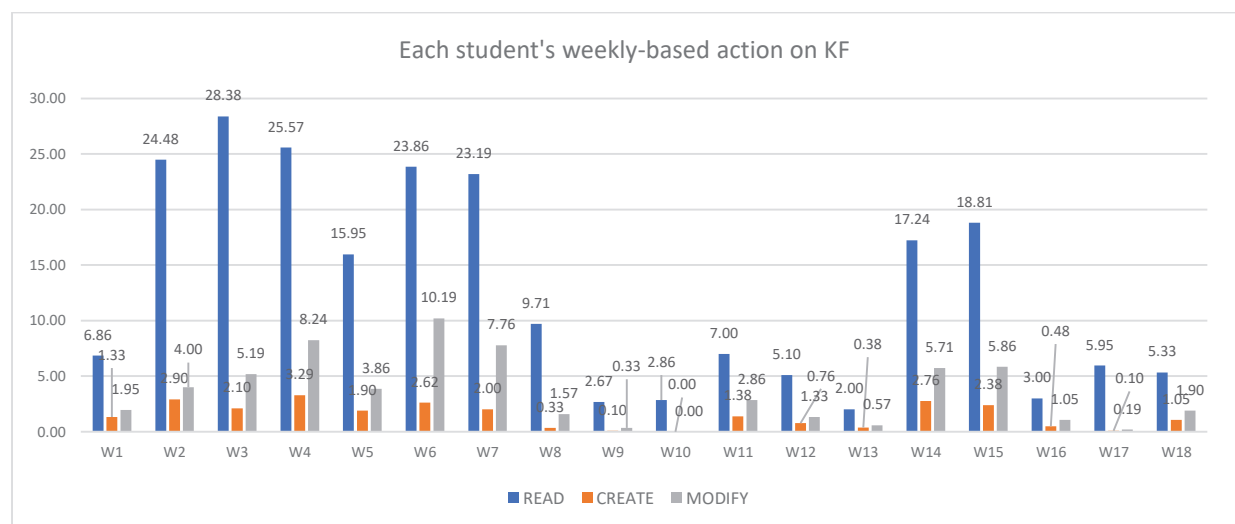
Figure 3. *The author networks*



Figure 4. *Online weekly performance in KF*

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