Factors Influencing Knowledge Sharing Between Peers Outside the Community College STEM Classroom

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Introduction

Knowledge sharing, an important component of peer learning, has been applied to a wide variety of educational situations and learning strategies (Boud, *et al*., 2001). Previous research examined knowledge sharing among peers in different settings, such as online learning and classroom (Nemanich, et al., 2009). However, there are several important research gaps in the current literature:

(1) Most of these research are quantitative.

(2) Only a few studies was conducted in the community colleges.

We proposed two research questions:

(1) In community colleges, what are the key factors that influence peer to peer knowledge sharing outside the classroom?

(2) What are the methods community college students use to share content knowledge?

In order to explore these questions, a qualitative study was designed to explore knowledge sharing between peers outside the classroom. A semi-structured interview protocol with eight students from a Mid-Atlantic community college was conducted to explore students' perceptions of knowledge sharing between peers. Table 1 contains the participants' demographic information.

Table 1. Table of Demographics

Pseudonym	*Age*	*Gender*	*Number of STEM courses completed*	*Major*	*Interviewed by*
Emery	20	F	2	N/A	S. Doak
Erin	24	F	15	N/A	S. Li
Jesse	23	F	4	Science	A. Gess
Joshua	30	M	6	Engineering	S. Zhou
Kelsea	23	F	6	N/A	S.Zhou
Setu	23	F	6	Science	S. Li
Tanner	19	M	1	Science	A. Gess
Taylor	19	M	1	Nursing	S. Doak

Research Design

Qualitative research

- Brief questionnaire to collect demographic information.
- Eight **single semi-structured interviews**, 20-35 minutes each.
- A standard set of seven questions to collect information and follow-up questions to clarity responses during interviews.
- Audio-recorded and transcribed verbatim.
- Each transcription was coded by two researchers separately.
- Data were analyzed using the constant comparative method (Merriam & Associates, 2002).
- Audit trail and field notes were maintained.

Ethic

- Virginia Tech and the Community College IRB approved.
- Signed consent received from all participants.

Findings

- **STUDENTS PREFER FACE TO FACE CONVERSATIONS because they want instant feedback {*not electronic forms of communication*}**
- **Self-efficacy had a large part in the participant's willingness to share**
- **Students share course content knowledge to understand the concepts better**
- **The participants would share more readily with peers with which they had a prior connection.**
- **Other students with highly self-centered or opinionated personalities were likely a negative factor in student's willingness to share knowledge.**

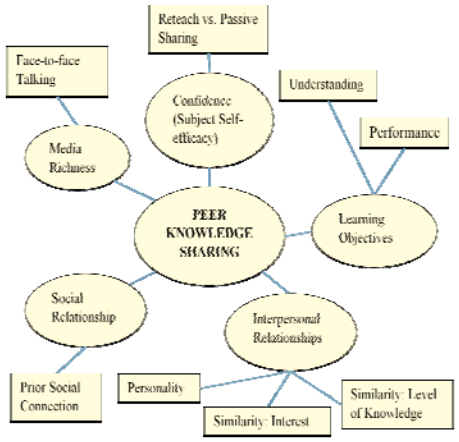

Figure 1. Concept Map of Themes and Outcomes

Conclusions & Implications

Community College Educators Can Create Conditions to Increase Extra-class Knowledge Sharing

There are specific conditions which influence students' knowledge sharing outside of the classroom which may be encouraged by:

- ❑ Constructing **frequent, structured, in-class** situations to promote sharing.
- ❑ Creating assignments that require **continued discussion outside class**.
- ❑ Constructing assignments to **improve subject efficacy** and **content knowledge**.
- ❑ Teaching STEM courses **integratively** and not in disciplinary isolation.

- **Please see accompanying handout for specific suggestions on how to achieve these recommendations.**

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Major References

1. Merriam, S.B., & Associates (2002). *Qualitative research in practice: Examples for discussion and analysis*. San Francisco, CA: Jose-Bass.
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3. Nemanich, L., Banks, M., & Vera, D. (2009). Enhancing knowledge transfer in classroom versus online settings: The interplay among instructor, student, content, and context. *Decision Sciences Journal of Innovative Education, 7*(1), 123–148.

Presented at the North American College &Teachers of Agriculture Conference, June 2014 Bozeman, MT