3.2 Learner-Learner Interaction: Achievement, Satisfaction, and Peer-Assessment

Findings

✓ The learner-to-learner interactions can significantly impact achievement in students. In this quasi-experimental study, the scoring results were significantly higher when students worked in groups rather than students who worked individually. Moreover, this study indicated a “positive correlation between interaction among learners and perceived learning in an online learning environment” (Kurucay & Inan, 2017, p.27).

✓ The study’s findings suggested that the interaction learner-content has the “stronger student-learner level predictor of student’s satisfaction” (Kurucay & Inan, 2017, p. 43). In contrast, the learner-to-learner interaction did not have any effects on students’ satisfaction similar to the findings from Kurucay & Inan (2017). Even more, the instructor-to-learner interaction was significantly weakened when in the model was included the class-level predictors. Overall, the learner-content interaction has a strong correlation with the content and the characteristic in the program in online learning settings (Kuo, Walker, Schroder, & Belland, 2014).

✓ The study identified five dimensions of self-efficacies in online settings:

1. Self-efficacy to complete an online course.
2. Self-efficacy to interact socially with classmates.
3. Self-efficacy on handle tools in a Course Management System (CMS).
4. Self-efficacy to interact with instructors in an online course.
5. Self-efficacy to interact with classmates for academic proposes.

The study’s findings show that “students' self-assessment about their capabilities to complete an online course is more important in explaining satisfaction with online learning than any other self-efficacies” (Shen, Cho, Tsai & Marra, 2013, p. 16)

✓ The study addresses peer assessment concerns of accuracy in MOOCs (see reference section), and suggest some methods to for these concerns (Goldin, 2011):

- Calibrated Peer Reviews (CPR™): This approach was developed by the University of California-Los Angeles and is similar to the peer assessment process. However, an additional step is needed in order to calibrate the peer rating with the instructor’s rating. This is done by rating “up to three standards essays or projects of known quality that had already been rated by the instructor” (Goldin, 2011, p. 320). Consequently, the proximity between a peer rating and the instructor’s rating will give a higher weight to the peer rater’s judgment.

- Bayesian post hoc stabilization: Bayesian modeling is a statistical technique of data analysis that can incorporate prior beliefs about the parameters. For example, it can be incorporated into the peers rating by considering them as normal distributed, by combining prior beliefs, data, and likelihood. In fact, the Bayesian model allows entering relationships among the data (Goldin, 2011).
Credibility index: This method is a modification of Calibrated Peer Review™ (CPR™), this method primarily identifying three sources of error in the peer assessment results, such as (Suen, 2014):


d. Intransferability: “Inability to maintain a constant level of accuracy from context to context” (Suen, 2014, p. 321).

For more information about credibility index, the study provides a podcast of the proposed credibility index on the TLT Penn State website. http://tlt.psu.edu/2013/07/12/peer-assessment-in-moocs-the-credibility-index/

✓ The study found that courses with less text-based content, individualized learning, and more interaction with others are more helpful for students to feel connected with their instructor. Students who had no interaction with other students reported to have more disconnection. Additionally, the study also found that text-based context does not provide enough clues for students to solve problems, and it was ineffective most of the time. Finally, the study suggested that learning communities help students to become motivated. However, many of the online programs do not fully maintain online communities given that in most of the cases are too teacher-driven (Boling, Hough, Krinsky, Saleem, & Stevens, 2012).

✓ Digital literacy and students’ attitude can significantly contribute to students’ self-efficacy. Considering that “digital literacy involves understanding how to use the information to productively locate information and understand it” (Prior, Mazanov, Meacheam, Heaslip, & Hanson, 2016, p. 95), the study suggested that for developing these capabilities in students, guides, and explicit instructions can serve as a means for supporting this development (Prior, Mazanov, Meacheam, Heaslip, & Hanson, 2016).

Instructional Design Recommendations

1) Social interaction is recommended for helping students to develop self-efficacy. It is needed to complete an online course by including “instructors’ proactive approaches for social interaction, such as monitoring and encouragement for social interactions” (Shen, Cho, Tsai & Marra, 2013, p. 17).

2) Implement teaching methods that emphasize apprenticeship and engagement in discovering expert strategies in context, some of these methods can be:
   - Teacher modeling
   - Coaching students
   - “Guiding students through exploration and problem solving” (Boling, 2012, p. 120)
3) Some guidelines for teachers to support motivation in online learners (Hartnett, M., 2016) (see Figure 9):

- Autonomy Support: “To support the autonomy needs of learners, online teachers need to take the time to find out the individual circumstances of students and remain alert to anything that might result in course requirements being perceived as constraining in some way” (Hartnett, 2016, p. 118).
- Competence Support: Provide timely guidance and formative feedback not only on what to do but also how to do it.
- Relatedness Support: Establish a supportive network for either collaborative or individual online activities.

4) Guidelines for Designers (see Figure 10) to support motivation in online learners (Hartnett, M., 2016):

- Autonomy Support: Developing “activities that enable students to apply new learning in an authentic way (e.g., simulations, scenarios, work-based practice, case studies) can promote immediate interest as well as help them to appreciate the larger importance of what they are learning” (p. 120).
- Competence Support: “Providing high-level information (e.g., about learning goals, overall course structure and assessment information) initially, followed by more detailed information that learners can easily access when ready, can help learners to manage the cognitive load” (p. 121).
- Relatedness Support: This can be done by designing activities that include a mix of collaboration in small groups or at the whole class level.
Fig. 5.1  What teachers can do to support the motivation of online learners

Figure 9 Three elements for supporting online motivation
5.2 What Designers Can Do to Help Support Learner Motivation

**Figure 5.2** What designers can do to support the motivation of online learners