Part 1: Discussion amongst the interaction scholars

1. **Status of and challenges in the current research relating to interaction in online learning:**

- (Berge) Researchers need to be challenged to move beyond study of student/teacher perceptions and satisfaction in online learning. We need hone in on whether more and different types of interaction equate to increased learning outcomes.
  - o There is promising research using academic analytics [http://www.educause.edu/Resources/Browse/Academic%20Analytics/16930] which might help us identify types of interaction that successful students engage in, but unsuccessful students do not, that may cause increased learning effectiveness and higher student performance.
- (Anderson) Interaction with others is such a human thing to do that it becomes almost a "motherhood statement" when learning is discussed, but what's the evidence: Does it stand true for all students, all disciplines, all topics?
  - o Academic analytics is a welcome development for identifying interaction patterns that are important in helping us with interventions. [Upcoming conference https://tekri.athabascau.ca/analytics/]
  - o Equivalency Theorem states that if any one of the three interactions types the involves the learner (learner/learner; learner/content (such as simulations); learner/teacher is at a high level then learning will occur. [recent article at http://www.ncolr.org/jiol/issues/viewarticle.cfm?volID=9&IssueID=29&ArticleID=146 for research support]
- (Roblyer) General agreement that interaction is good thing, but question is how is interaction to take place in an online course and what is the impact on established course outcomes.
  - o Recently review the literature on learner-learner interaction. Reveals so many variables can influence outcomes of the research studies that results too limited to draw cross-study conclusions. (Example: Of five studies focused on graded group interaction, one study used adults in Malaysia and another fifth-grade geometry students.)
    - ▪ Unless studies are replicable patterns not determined. No replicable patterns evident in the literature on the value of learner-learner interaction.
    - ▪ Despite lack of measures in the research on interaction there are some laudable examples in recent literature on discussion groups:
      - Sher, A. (2009). Assessing the relationship of student-instructor and student-student interaction to student learning and satisfaction in web-based online learning environment. *Journal of Interactive Online Learning, 8*(2). Retrieved from www.ncolr.org/jiol/issues/PDF/8.2.1.pdf
      - Taylor, P., & Maor, D. (2000). Assessing the efficacy of online teaching with the Constructivist On-Line Learning Environment Survey. *Teaching and Learning Forum.* Available http://otl.curtin.edu.au/tlf/tlf2000/taylor.html

- Dixon, M. D. (2010). Creating effective student engagement in online courses: What do students find engaging? *Journal of the Scholarship of Teaching and Learning, 10*(2), 1-13.

o (Swan) Community of Inquiry (CoI) framework is process model, grounded in social-constructivist epistemology that assumes effective learning in higher education requires the development of a community of learners that supports meaningful inquiry.

  ▪ Validated CoI instrument (see http://communitiesofinquiry.com/methodology) is currently being used by researchers to identify the process (the "how" and "why") on identified outcomes (such as academic success, retention).

  ▪ One study, Boston, Diaz, Gibson, Ice, Richardson, Swan 2008 study (reprinted 2010), analyzed 28,000 students who persisted and found that 21% do so because of social presence.

  ▪ Swan, Matthews, Welch, & Bogler (2010) study found improving online course to meet QM design standards had no impact on CoI, *but* design improvements increased 2 of 4 specified learning outcomes. "Indicates either to change standard 5.2 or consider a separate measure of online process of online learning."

  - Swan & Shih (2005) found a relationship between social presence and course design. Also, presence of instructor is twice as likely to result in perceived interaction than learner-learner presence. Further analysis indicated learner preference influence perceptions of perceptions of online learning.

o (Gunawardena) pointed out importance of social context to the design of interaction.

  o 2009 study surprised that across five disciplines (engineering, law, nursing, education, & business) and across three higher education institutions in three countries (US, Spain, & Venezuela) that they defined online interaction from a group learning perspective, visioning a community of learners online, rather than from an individual learner's perspective.

  o Dilemma – might need to rethink the role and purpose of learner-learner interaction as building a communal learning resource (VanAalst, 2006).

  o Knowledge building assumed as opposed to skill development. Even in skill acquisition courses the ability of team might be important.

2. **What the research says about influences (criteria, situations, and learning environments) that impact the value of interaction in an online course, with special attention to learner-learner interaction.**

- [Berge] UMBC study showing relationship may exist between student performance as defined by grades and his or her activity in the campus's online course management system (CMC).

- [Anderson] Sure, it wonderful to relate interaction to learning, but it is dangerous if we take simplistic statements in which we ignore the richness of the dimensions of interaction.

  o Models of learning activities help us recognize the complexity of interaction within formal education courses. (see slide)

- o Learning activities are so varied, dependent on intended learning outcomes; learning environment; learners; and other people (for example, peers, mentors, instructors), that learner-learner interaction might not be appropriate in all cases. (see slide)
  - o There is evidence that students form informal networks, liaisons with others even outside of the formal learning environment.
  - o The context of the learner (taxonomy of the many; Dron & Anderson, 2007) provides model. For example, George Siemen's work in connectiveness (networks) where he's now running an online course with 1,000 students. (http://www.connectivism.ca/about.html)
- (Roblyer) Purpose of learner-learner activity is a key launching point – for example, is it for social or other engagement? Group problem solving?
  - o Student background variable has tremendous influence.
- (Gundawardena & LaPointe, 2008) – influences to consider on value of learner-learner interaction
  - o socio-cultural environment and context
  - o diverse educational expectations
  - o learning styles and preferences
  - o communication styles (for example; high and low context, gender differences)
  - o power distance
  - o language issues (ESL)
  - o interpretation of design elements
  - o silence

3. **After individual presentation (outlined above), the panelists had follow-up open discussion. Key points:**

- Data on social presence and persistence/retention cannot be ignored (Swan).
- Encouraging informal social networking might be useful, even if outside of the course. (Anderson)
- Equivalency theorem notes that learner-learner interaction not necessary, as long as one of the three types that involve the learner (learner-teacher; learner-content; learner-learner) is at a high quality and level.
- Issue of transparency – Course designers should justify why interaction supports the learning activities and is consistent with the learning philosophical approach.
  - o Theoretically consistent (Anderson)
    - Consistent (example of non-consistency - announce constructivist design, but course activities are independent learning).
    - Variability – from cognitive psychology reminds us that learning reduced by boredom (cognitive load).
    - Student reflection – ask student how interaction required in course impacting their own learning
  - o Acknowledge transparency might be challenging for those outside of education (Berge)
  - o [QM reflective note: The issue of transparency might be related to concept of alignment.]
- Self-paced learning/professional training

- o "Direct learning" (Berge) is inconsistent with learner-learner interaction.
  - o Teamwork is a workplace concept, but not necessarily strategic in an academic setting – is more artificial in an academic course and might not be beneficial in skill acquisition courses.
- While developing professionalism for students in an academic or professional discipline (socialized into a discipline) is a worthy goal (Gunawardena and Swan), it is challenging to agree on a definition of what "community" would be if learner-community interaction is recommended.

Part 2: Further discussion with questions/comments from other Summit participants (representatives of QM's Academic Advisory and Rubric Committees)
[Ron Legon, Deb Adair, Julie Hamlim, Jurgen Hilke, John Sener, Bredna Boyd, Amanda Dominque, Deb Gearhart, Becky Giger, Allison Powell]

1. Legon suggested modification of standard 5.2: *Learning activities should foster learner interaction.*
   - Description of possible types of interaction would be in expanded annotation.
   - Anderson suggested the word "fosters" should be replaced with something that gives assessment to the quality of interaction.
2. Follow-up modification of standard 5.2: *Learning activities support deep and meaningful formal learning at a high level through one or more types of interaction as appropriate to the course.*
   - Berge notes if assessment of quality of interaction activity is to be made, then it would be crucial to use the SME on team to help designers (and reviewers) assess "deep and meaningful".
   - Legon commented that reviewers do look for evidence that interactions go beyond rote.
   - Swan and Gunawardena recommended removing word "formal"
   - Legon noted that by removal of word "formal" and by not prescribing which type/s of interaction within the standard then 5.2 would be open to self-paced, professional training course reviews. However, other standards would need to be reviewed before the QM Rubric would be appropriate for review of those types of online course.
3. Suggested topics to be included in annotation:
   - The possibility of cognitive overload needs to be considered, especially when designing learning activities. More is not always better and can result in student disengagement from overload.
   - Learning activities need to support learning through one or more types of interaction as appropriate to the course objectives, learner background, and sociocultural context.
4. Upon reflection of the QM representatives present, the following recommendation can be made:
   - *Learning activities should foster learning interaction.*
   - It is further recommended that the annotations should be expanded to includes the points made by the panelists.

The full recording of the 3.5 hour Elluminate session is available to QM subscribers by emailing info@qualitymatters.org

Kay Shattuck, Deb Adair, Ron Legon, Julie Hamlin