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To cite this article: Doris U. Bolliger & Florence Martin (2018) Instructor and student perceptions of online student engagement strategies, Distance Education, 39:4, 568-583, DOI: 10.1080/01587919.2018.1520041

To link to this article: https://doi.org/10.1080/01587919.2018.1520041

Published online: 18 Sep 2018.

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ARTICLE

Instructor and student perceptions of online student engagement strategies

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ABSTRACT

The purpose of this article is to report findings pertaining to faculty members’ perception of the importance of engagement strategies utilized in the online learning environment and to compare them with student perception data that had been previously collected using the same instrument. A validated survey instrument, the online engagement strategies questionnaire, was used to collect data from online instructors who teach in higher education. Email distribution lists of two professional associations were utilized to collect the data. A total of 161 online instructors responded. While instructors and students agreed on the importance of several engagement strategies, results also show that instructors perceive engagement strategies listed on the survey instrument as more important than do students.

ARTICLE HISTORY

Received 23 March 2018
Accepted 2 September 2018

KEYWORDS

Online education; higher education; student engagement; strategies

Introduction

Online learning is an appealing educational option because it offers flexibility and convenience to students. However, as in traditional classrooms, a leading concern prevails with keeping students motivated and engaged in the online setting. Engagement is an important factor in online learning, where attrition rates are higher than in the traditional face-to-face environment (Angelino, Williams, & Natvig, 2007). Student engagement has a positive relationship with student satisfaction, persistence, and academic performance (Meyer, 2014).

Chickering and Gamson (1987) created a framework for student engagement in more traditional environments that identifies seven principles. However, all of these principles can be applied to distance learning environments: increased contact, cooperative work, active learning, timely feedback, time requirements, high standards, and individualization. Student engagement, however, is a complex issue with multiple factors. More recently, Kahu (2013) developed a more comprehensive conceptual framework that extends beyond the psychological elements (e.g., affect, cognition, and behavior) and includes multiple facets such as psychosocial and structural influences and proximal and distal consequences. According to Kahu, “A key strength of envisioning engagement in this way is that it acknowledges the lived reality of the individual, while not reducing engagement to just that” (p. 766).
According to Anderson (2003), interaction is instrumental in student engagement and should be fostered in the online learning environment. For these reasons, interactions that foster student engagement, for example, learner–learner, learner–instructor, and learner–content interactions (Moore, 1993), are useful in stimulating students’ interest in online learning environments in order to assist students to achieve the best possible educational outcomes (Chen, Gonyea, & Kuh, 2008).

In 2016, Martin and Bolliger (2018) investigated students’ perceptions pertaining to engagement strategies in the online learning environment using the online engagement strategies questionnaire (OESQ). Results indicated learners valued learner–instructor engagement strategies most among Moore’s (1993) three interaction categories. In this category, students rated regular announcements, or email reminders, and grading rubrics as most beneficial. The most beneficial engagement strategies in the learner–learner category were icebreakers and collaborative work. In the learner–content category, real-world projects and structured or guided discussions were most beneficial to respondents. This article reports online instructors’ perceptions of the importance of student engagement strategies and contrasts results of instructors and students.

**Literature review**

**Learner–learner interaction**

Learner–learner interaction is important in the engagement of students in the online learning environment. This type of interaction provides opportunities for students to learn from one another through the exchange of resources, discussion, sharing of experiences, and ideas. Through collaboration with peers, students also establish a community of online learners, which can foster deeper learning (Shackelford & Maxwell, 2012). Research indicates that strong peer interactions in online courses are a predictor of student satisfaction (Jung, Choi, Lim, & Leem, 2002).

Several strategies can be implemented to initiate and support learner-to-learner interaction. Ryle and Cumming (2007) suggest posting welcome messages and announcements to establish expectations and set the tone for the course, posting discussions in advance to stimulate interest, and providing necessary resources. These activities establish a supportive online environment for students. Park (2015) states the importance of fostering student interactivity and deeper learning through incorporating online reflective practice. Park (2015) further states that embedding reflective learning into an online learning platform requires the student to collaborate with diversity in learning styles, personalities, learning preferences, and varying levels of technology competence. This promotes collaborative learning and reflection as each student reflects on their own and others’ contributions to the discussion (Stepich & Ertmer, 2003). In addition, students are likely to engage more meaningfully online when they feel they have an established sense of belonging to a community.

Learner–learner interaction can further be enhanced by constructing interactive introduction activities at the beginning of a course. This also increases feelings of belonging (Stepich & Ertmer, 2003). For instance, using online delivery platforms and other technologies, students could share photos and other personal media artifacts to explain their backgrounds and interests in ways that allow their fellow community of learners to comment.
and engage in conversations around common interests and experiences. Sharing personal experiences and exchanging ideas and resources through discourse is very important for establishing an online community leading to greater student satisfaction (Kurucay & Inan, 2017). Moreover, students who have taken multiple online courses are more likely to establish a sense of community much quicker than novice learners (Shackelford & Maxwell, 2012). According to Lave and Wenger (1991), the benefit is that experienced online learners can quickly model a community of practice by providing novice learners the confidence they need to contribute through legitimate peripheral participation as they learn the sociocultural rules for engaging online (Ardichvili, 2008).

**Learner–instructor interaction**

The learner–instructor interaction is an important predictor of students’ satisfaction and achievement in online learning (Andersen, Lampley, & Good, 2013; Kang & Im, 2013; Walker, 2016). Research shows that through interaction, the instructor has the ability to foster the learner’s sense of community and belonging in multiple ways. Instructors can support student participation and learning through modeling online behaviors and establishing presence by engaging and guiding online discussions. Instructors can also enhance students’ sense of community by providing multiple communication channels, support and encouragement, and timely feedback and by setting expectations for the course (Martin, Wang, & Sadaf, 2018; Shackelford & Maxwell, 2012).

As good communication is pertinent to fostering student engagement and feelings of satisfaction in the online course, it is beneficial when instructors provide students with various means of communication that promote learner–instructor interaction. However, not all communication tools are valued. For example, students did not like chats or phone calls (Walker, 2016).

Students perceive a sense of belonging when they can interact with instructors and perceive that they are at least accessible through multiple means. Although the presence of the facilitator is important, Ryle and Cumming (2007) suggest that each learning community may have different needs pertaining to interactions with the facilitator.

**Learner–content interaction**

Many factors may influence interaction. According to Vrasidas and McIsaac (1999), these factors are course structure, class size, the students’ experiences with online courses, and feedback. Learner–content interaction is another component of engagement crucial to student success (Vrasidas, 2000). According to Tuovinen (2000), learner–content interaction is critical because students engage with instructional materials and planned activities. Essentially, learner–content interaction refers to the time students are involved in studying instructional content in various formats (e.g., text, video, audio, interactive games, and online resources;) (Su, Bonk, Magjuka, Liu, & Lee, 2005).

Xiao (2017) highlights the lack of research on learner–content interaction. The author suggests that the assumption that students know how to interact with content should be further explored because learner–content interaction is crucial for learning in any environment. Rodrigues and Armellini (2013) analyzed participants’ engagement with content in an online course without planned social interaction. They found that there
was significant interaction between learners and instructional content. Students articulated that they learned a lot in their online course, and they received higher grades than students who did not take the online course. These results support that content-based learning designs allow students to master content and progress at their own pace.

Chao, Hwu, and Chang (2011) combined online learning and knowledge sharing in an experimental design. Results showed that knowledge sharing supports online learning effectively. Similarly, learner–content interaction is related to students’ success in the online environment. Zimmerman (2012) examined learner–content interaction as a predictor of success in online learning settings and investigated the relationship between time spent with course materials and students’ grades. Findings indicate that students who spent more time on course materials were more likely to pass the course.

Research purpose and questions

The purpose of the study was to investigate faculty perceptions of strategies that foster student engagement in the online learning environment and contrast them with the perceptions of students. The following research questions guided the study:

1. Which strategies do instructors perceive to be important in enhancing learner-to-learner, learner-to-instructor, and learner-to-content engagement in the online environment?

2. Which strategies do instructors identify as most valuable and least valuable to engage students in the online learning environment?

3. What differences exist in the perception of instructors and students on engagement strategies in the online environment?

Methodology

Setting and sample

Faculty members who teach online at several universities in the United States were invited to participate via an email distribution list of two national professional organizations. One organization consists of educators and others who have an interest in improving training and instruction with the use of technology. The second organization is an educational research organization that seeks to improve education through research; it has over 100 special interest groups. Participation of researchers and educators who have an interest in teaching and learning online was solicited. A total of 161 participants completed the survey.

Participants

Faculty members

Most participants in this 2016 study were female (70.3%), and 3.2% preferred not to disclose their gender. Their ages ranged from 26 to 90 years ($M = 51.6$ years). Respondents’ experience in higher education and online teaching varied considerably: 0–54 years ($M = 13.7$ years) and 0–25 years ($M = 7.9$ years), respectively. A few individuals were still very new to online teaching. The highest number of individuals held the rank of
assistant professor, and most faculty members taught in education (Table 1). Online courses were primarily delivered asynchronously (81.2%), synchronously (10.4%), blended (4.5%), or a combination of asynchronously and synchronously (3.9%).

**Students**

The sample of the study consisted of 155 online students enrolled at eight universities in the United States. Most respondents were education majors (85.5%); however, other disciplines such as health sciences, engineering, arts and sciences, and business were also represented. Their ages ranged from 20 to 67 years ($M = 39.6$ years), and a large percentage was female (67.8%).

**Instrument**

The OESQ (Martin & Bolliger, 2018) was used to collect the data. The survey instrument consists of three factors based on Moore's (1993) interaction theory: learner–learner, learner–instructor, and learner–content interactions. The instrument consists of 39 questions: 29 Likert-type items ranging from 1 (very unimportant) to 5 (very important), three open-ended questions, and seven demographic questions. Open-ended questions asked participants to share strategies they perceived as most and least valuable and other beneficial strategies not included in the questionnaire. Demographic questions consisted of age, gender, academic rank, discipline, years taught in higher education and online, and delivery format of online courses.

The instrument had established psychometric properties and was considered a valid and reliable instrument. Previously, the instrument’s internal reliability coefficient was .87. All three subscales had satisfactory internal reliability coefficients: learner-to-learner ($\alpha = .74$), learner-to-instructor ($\alpha = .73$), and learner-to-content ($\alpha = .73$); (Martin & Bolliger, 2018). After the data collection for this research study concluded, the Cronbach’s alphas were calculated. All reliability coefficients were satisfactory: instrument ($\alpha = .93$), learner-to-learner ($\alpha = .76$), learner-to-instructor ($\alpha = .81$), and learner-to-content ($\alpha = .79$).

<table>
<thead>
<tr>
<th>Academic rank ($n = 154$)</th>
<th>$n$</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assistant professor</td>
<td>35</td>
<td>22.7</td>
</tr>
<tr>
<td>Associate professor</td>
<td>33</td>
<td>21.4</td>
</tr>
<tr>
<td>Adjunct</td>
<td>30</td>
<td>19.5</td>
</tr>
<tr>
<td>Full professor</td>
<td>26</td>
<td>16.9</td>
</tr>
<tr>
<td>Instructor</td>
<td>12</td>
<td>7.8</td>
</tr>
<tr>
<td>Graduate teaching assistant</td>
<td>9</td>
<td>5.8</td>
</tr>
<tr>
<td>Instructional designer</td>
<td>5</td>
<td>3.2</td>
</tr>
<tr>
<td>Librarian</td>
<td>2</td>
<td>1.3</td>
</tr>
<tr>
<td>Retired</td>
<td>2</td>
<td>1.3</td>
</tr>
<tr>
<td><strong>Academic discipline ($n = 149$)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>119</td>
<td>79.9</td>
</tr>
<tr>
<td>Arts and sciences</td>
<td>10</td>
<td>6.7</td>
</tr>
<tr>
<td>Health sciences</td>
<td>8</td>
<td>5.4</td>
</tr>
<tr>
<td>Business</td>
<td>6</td>
<td>4.0</td>
</tr>
<tr>
<td>Engineering/applied sciences</td>
<td>4</td>
<td>2.7</td>
</tr>
<tr>
<td>Library science</td>
<td>2</td>
<td>1.3</td>
</tr>
</tbody>
</table>

Table 1. Ranks and disciplines of respondents.
Procedure and data collection

The data were collected in Spring of 2017 with the use of an online survey tool that was housed on a secure server at one of the universities with which one of the researchers is affiliated. Email invitation with information about the study and an embedded link were forwarded to administrators of the mail distribution lists. An initial participation request and one reminder were sent out in order to increase the number of responses. Participation was voluntary and anonymous. To ensure anonymity, respondents were able to register for the drawing of one of the three US$25 gift cards by completing an online form on Google. Prior to the data collection, approvals from institutional review boards were obtained.

Data analysis

One case was deleted because it had one-third of data missing. None of the 160 valid cases had data missing. Frequencies and descriptives were calculated. Three new variables were created: one for each of the subscales. After combining the two data sets (instructors and students), independent sample t tests were performed to ascertain differences in responses between the two groups. Responses to three open-ended questions were coded by one individual. Analytical and topic coding were used in order to form categories. Then, categories were sorted and compared to detect and report common themes (Flick, 2006; Richards, 2009).

Results

To answer research question 1, participants thought strategies for engaging online students were important. The total scores of respondents ranged from 31 to 141 (M = 117.90) on a scale with the lowest and highest score of 29 and 145, respectively (pertaining to the 29 five-point Likert-type items).

Learner–learner engagement

Instructors valued some engagement strategies more highly than others. Over 90% rated icebreaker (93.8%) and collaborative activities (93.7%) as important or very important. Over 80% of participating instructors rated interaction during presentations by students (89.4%) and peer review (80.6%) as important or very important. Participation in activities such as icebreakers, collaborative work, peer presentations, and peer review of assignments was perceived as valuable. Virtual lounges were perceived as least important on the subscale. Four items on the learner-to-learner subscale had a mean score of 4.00 or higher (see Table 2).

Learner–instructor engagement

Seven items had mean scores above 4.00 (Table 3). The item with the lowest mean score was item 20, which refers to the integration of synchronous online sessions. The overwhelming majority rated regular announcements or email reminders (96.9%) and an informal question and answer forum (90.0%) as important or very important. Using student names (89.4%), posting grading rubrics (87.5%), creating course orientations (83.8%), and using reflections...
were also rated as important or very important. Respondents thought that it was most important to regularly communicate with learners either via email, announcements, or discussions.

### Learner–content engagement

A high percentage of participants believed it was important or very important to provide structured discussions (94.4%) and for students to work on realistic scenarios (93.7%) and interact with content in more than one media format (92.5%). Students also should have time and opportunity to reflect on course elements (87.5%). Six items on this subscale had a mean above 4.00 (Table 4). The lowest valued strategies were the incorporation of synchronous sessions (for events and guest talks) and provision of self-tests for learners.
To answer research question 2, faculty members were invited to complete open-ended questions regarding most and least valuable strategies. In total, Ten valuable strategies were mentioned by 144 faculty members (Table 5). The most valuable elements were ensuring instructor presence or personal contact, including relevant course content, and providing frequent communication with students.

In total, 11 strategies were mentioned by 137 faculty members who completed the open-ended question (Table 6). The three most frequently mentioned strategies that were not highly valued by online instructors were the provision of a lot of textual information or content, inclusion of discussions or lounges that were used for administrative reasons (e.g., seat time), and incorporation of inflexible synchronous sessions.

**Most and least valuable strategies**

To answer research question 2, faculty members were invited to complete open-ended questions regarding most and least valuable strategies. In total, Ten valuable strategies were mentioned by 144 faculty members (Table 5). The most valuable elements were ensuring instructor presence or personal contact, including relevant course content, and providing frequent communication with students.

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**Other beneficial strategies not listed on the questionnaire**

A total of 109 instructors completed the second open-ended question that prompted instructors to share strategies not listed on the questionnaire. Respondents mentioned

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**Table 4. Percentage, means, and standard deviations on learner-to-content items (N = 160).**

<table>
<thead>
<tr>
<th>Item</th>
<th>Percentage</th>
<th>VU/U</th>
<th>N</th>
<th>I/VI</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>21. Students interact with content in more than one format (e.g., text, video, audio, and interactive games or simulations).</td>
<td>2.5</td>
<td>5.0</td>
<td>92.5</td>
<td>4.34</td>
<td>0.72</td>
<td></td>
</tr>
<tr>
<td>22. Students use optional online resources to explore topics in more depth.</td>
<td>4.4</td>
<td>16.3</td>
<td>79.4</td>
<td>4.06</td>
<td>0.83</td>
<td></td>
</tr>
<tr>
<td>23. Students experience live, synchronous web conferencing for class events and/or guest talks.</td>
<td>16.2</td>
<td>27.5</td>
<td>56.3</td>
<td>3.53</td>
<td>1.09</td>
<td></td>
</tr>
<tr>
<td>24. Discussions are structured with guiding questions and/or prompts to deepen their understanding of the content.</td>
<td>1.9</td>
<td>3.8</td>
<td>94.4</td>
<td>4.47</td>
<td>0.69</td>
<td></td>
</tr>
<tr>
<td>25. Students research an approved topic and present their findings in a delivery method of their choice (e.g., discussions forum).</td>
<td>4.4</td>
<td>16.3</td>
<td>79.4</td>
<td>4.08</td>
<td>0.84</td>
<td></td>
</tr>
<tr>
<td>26. Students search for and select applicable materials (e.g., articles, and books) based on their interests.</td>
<td>5.7</td>
<td>19.4</td>
<td>75.0</td>
<td>3.95</td>
<td>0.87</td>
<td></td>
</tr>
<tr>
<td>27. Students have an opportunity to reflect on important elements of the course (e.g., use of communication tools, and their learning).</td>
<td>3.8</td>
<td>8.8</td>
<td>87.5</td>
<td>4.24</td>
<td>0.82</td>
<td></td>
</tr>
<tr>
<td>28. Students work on realistic scenarios to apply content (e.g., case studies, reports, research papers, and presentations).</td>
<td>1.2</td>
<td>5.0</td>
<td>93.7</td>
<td>4.48</td>
<td>0.68</td>
<td></td>
</tr>
<tr>
<td>29. Students use self-tests to check their understanding of materials.</td>
<td>10.6</td>
<td>31.9</td>
<td>57.5</td>
<td>3.66</td>
<td>1.00</td>
<td></td>
</tr>
</tbody>
</table>

*Note. Scale ranging from 1 to 5: VU = very unimportant; U = unimportant; N = neither; I = important; VI = very important.*

**Table 5. Categories of most valuable engagement strategies reported by respondents. (n = 144).**

<table>
<thead>
<tr>
<th>Themes</th>
<th>Frequency</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presence/personal contact</td>
<td>36</td>
<td>Strong evidence of instructor presence in the course. Students are more engaged when they know the instructor is present in the course, interacting with them, and care about what they are learning in the course</td>
</tr>
<tr>
<td>Relevant content</td>
<td>19</td>
<td>High interest content and making connections with them</td>
</tr>
<tr>
<td>Communication</td>
<td>15</td>
<td>Active and proactive communication and presence by the instructor</td>
</tr>
<tr>
<td>Different activities</td>
<td>13</td>
<td>Encourage the students to participate in learning activities</td>
</tr>
<tr>
<td>Community building</td>
<td>12</td>
<td>Building a sense of community especially in asynchronous courses</td>
</tr>
<tr>
<td>Discussion forums</td>
<td>12</td>
<td>#1 based on my experience teaching online for 13+ years is regular instructor interaction with the discussion forums</td>
</tr>
<tr>
<td>Clear instructions</td>
<td>8</td>
<td>Clear, specific instructions with different activities</td>
</tr>
<tr>
<td>Feedback</td>
<td>7</td>
<td>Prompt feedback</td>
</tr>
<tr>
<td>Videos</td>
<td>6</td>
<td>Asynchronous video has been very effective for my online students</td>
</tr>
<tr>
<td>Depends on the context</td>
<td>6</td>
<td>Maintaining a context that is relevant, practical, transferable, etc.</td>
</tr>
</tbody>
</table>
11 strategies (Table 7). The three strategies mentioned most frequently were student collaboration on projects, instructor feedback, and well-structured courses.

**Contrast of instructor and student perceptions**

Results of the independent sample t-tests revealed that 10 tests were statistically significant. Instructors had higher mean scores for nine of 10 items (Table 8). Students had a higher mean for item 15 than instructors; they placed a higher value on instructors to post due date checklists in each instructional unit compared to instructors. Instructors had a statistically significant higher mean score on the learner-to-learner subscale, \( t(304) = 4.23, p < .001 \) (Table 9). Students (\( M = 3.63 \)) valued learner–learner engagement strategies less than instructors (\( M = 3.88 \)).

**Table 6. Categories of least valuable engagement strategies reported by respondents \((n = 137)\).**

<table>
<thead>
<tr>
<th>Categories</th>
<th>Frequency</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>A lot of reading/text</td>
<td>29</td>
<td>Just reading a bunch of text online</td>
</tr>
<tr>
<td>Discussion forums and student lounges</td>
<td>24</td>
<td>Discussion boards just used for the sake of points or counting seat time</td>
</tr>
<tr>
<td>Synchronous sessions</td>
<td>18</td>
<td>Synchronous class-wide meetings. I believe that online learning should be flexible, so students can fit it into their existing schedules</td>
</tr>
<tr>
<td>Instructional videos</td>
<td>13</td>
<td>Recording/watching videos all the time is just burdensome</td>
</tr>
<tr>
<td>Teacher centered</td>
<td>8</td>
<td>An authoritative approach that implies superiority and establishes punitive consequences for relatively arbitrary items</td>
</tr>
<tr>
<td>When the instructor is not present</td>
<td>8</td>
<td>Lack of instructor presence, no feedback in discussions and on assignments</td>
</tr>
<tr>
<td>Overuse of technology</td>
<td>8</td>
<td>You have to be careful not to overuse technology, so the concentration remains on the content</td>
</tr>
<tr>
<td>Busy work</td>
<td>7</td>
<td>Writing assignments that seem like busy work</td>
</tr>
<tr>
<td>Group work</td>
<td>4</td>
<td>Group work in an online environment is difficult, at best</td>
</tr>
<tr>
<td>Student profiles</td>
<td>4</td>
<td>The online profiles are n’t that useful for engagement</td>
</tr>
<tr>
<td>Grading rubrics</td>
<td>2</td>
<td>Giving them a rubric or checklist for every assignment. They become doers rather than engagers</td>
</tr>
</tbody>
</table>

**Table 7. Beneficial engagement strategies not listed on the questionnaire reported by respondents \((n = 109)\).**

<table>
<thead>
<tr>
<th>Categories</th>
<th>Frequency</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students’ collaboration</td>
<td>15</td>
<td>Co-construction of a common knowledge base (e.g., a real wiki)</td>
</tr>
<tr>
<td>Feedback</td>
<td>10</td>
<td>Students have an opportunity to receive feedback on draft design work prior to the assignment due date</td>
</tr>
<tr>
<td>Well-structured course</td>
<td>8</td>
<td>Organizing course content in modules by week, so students can easily orient themselves in the course</td>
</tr>
<tr>
<td>Online office hours</td>
<td>7</td>
<td>Online office hours so students can just drop in to ask a question</td>
</tr>
<tr>
<td>Social media for communication</td>
<td>6</td>
<td>Use of social media as alternative to discussion board</td>
</tr>
<tr>
<td>Flexibility</td>
<td>5</td>
<td>Providing or allowing students great flexibility in how they satisfy assignments is beneficial for engagement</td>
</tr>
<tr>
<td>Technology support</td>
<td>5</td>
<td>Providing screencast instructions on how to make use of the required technology</td>
</tr>
<tr>
<td>Track student activity</td>
<td>5</td>
<td>A dashboard which shows student activity and progress</td>
</tr>
<tr>
<td>Bio/profile</td>
<td>4</td>
<td>I find that assigning a picture to a name makes it more approachable when writing in the discussion forum or using other online tools</td>
</tr>
<tr>
<td>Authentic assessment</td>
<td>3</td>
<td>It is also important to have authentic assessments that are relevant to the real world</td>
</tr>
<tr>
<td>Humor</td>
<td>3</td>
<td>Comics that may lighten up the subject matter or offer humor during an intense week</td>
</tr>
</tbody>
</table>
However, students also believed that strategies to engage them in the online learning environment were important. The overall scores on the instrument were lower for students compared to instructors. Student scores ranged from 84 to 145 ($M = 113.74$), whereas the mean for instructors was 117.90 ($Figure 1$). The results of an independent sample $t$ test were significant, $t(304) = 2.88$, $p = .004$. The confidence intervals ranged from 1.31 to 7.00.

**Discussion and conclusion**

**Learner–learner engagement**

The findings from this study show faculty members rated students introducing themselves using an icebreaker discussion as the most important learner–learner engagement strategy. Research studies have found icebreaker activities to create a supportive and friendly atmosphere in online courses (Reushle & Mitchell, 2009). Vonderwell (2003) found that icebreaker activities are also used as a strategy to start dialogue for collaborative learning.

Students working collaboratively using online communication tools to complete case studies, projects, reports, and so on was rated the second highest by the faculty. This was also consistent in the responses to open-ended questions, where student collaboration was rated as a beneficial strategy. A faculty member mentioned in the open-ended comment that “co-construction of a common knowledge base using a real wiki” is a beneficial engagement strategy. Researchers have found that some students depend more on their peers and prefer working collaboratively instead of asking questions of their instructors (Beck, 2010).

Students using a virtual lounge where they can meet informally to share common interests was rated the lowest by instructors. While virtual lounges are helpful in building relationships, graduate students may not have the time to participate in discussion.
outside of class (Harrell, 2008). Although faculty members create virtual lounge in the online courses, they might know from experience that not all students have the time to participate in these lounges. Also, with the advancement in technology, students might be using other communication methods to build relationships with their peers.

These results pertaining to learner–learner engagement are consistent with Martin and Bolliger’s (2018) findings of student perception of learner–learner engagement strategies. Interestingly, students and instructors agreed on the top two engagement strategies and the least important strategy for learner–learner engagement based on the OESQ. Although instructors agreed on the two most important and the least important engagement strategies with students, this was the only subscale where instructors rated the strategies significantly higher than students.

**Learner–instructor engagement**

Findings from this study show that instructors rated instructors regularly sending emails or posting announcements or reminders as the most important learner–instructor engagement strategy. Cuthrell and Lyon (2007) point out that sending emails periodically provides an opportunity for the instructor to reach out and engage students. Ko and Rossen (2010) found sending email announcements through the learning management system beneficial. These results are also consistent with Martin and Bolliger’s (2018) findings where students considered this as the most important learner–instructor engagement strategy.

Referring to students by name in discussion forums was rated the second highest strategy. Rourke, Anderson, Garrison, and Archer (2007) believe referring to students by name is a better
indicator of quality of interaction than having students’ names or message appear automatically due to software functionality. This tends to enhance social presence in the online classroom.

The use of various features during synchronous sessions to interact with students was rated the lowest by the students. This is contradictory to research by others who found synchronous features engage students (Martin, Parker, & Deale, 2012; Ward, Peters, & Shelley, 2010). This was also reported in the qualitative open-ended comments, where synchronous sessions were rated by 18 faculty as least valuable strategy. One of the faculty responded in the open-ended question, “I teach grad students who are also working adults. I have never had good participation when I schedule synchronous chats or office hours.” The busy schedules of graduate students could be one of the reasons that synchronous sessions and the features are not perceived as engaging the students.

**Learner–content engagement**

Instructors rated students working on realistic scenarios to apply content (e.g., case studies, reports, research papers, and presentations) as the most important learner–content engagement strategy. Other researchers have pointed out the importance of providing course materials and activities where students are able to apply content to discover facts, practice and perfect their skills, and gain knowledge and skills (Stavredes & Herder, 2014).

Structured discussions with guiding questions and/or prompts to deepen student understanding was rated the second highest. Several research studies have investigated the structure of discussions in online courses. Gilbert and Dabbagh (2005) found that when discussions are guided by instructors, students have the potential to obtain a deeper understanding of content.

Live, synchronous web conferencing course sessions and/or guest talks was rated as the lowest. This is contradictory to previous findings that showed synchronous tools engage students (LaPointe, Greysen, & Barrett, 2004; Reushle & Loch, 2008), promote interactivity, develop community, and reach students at different locations (Martin & Parker, 2014). However, it is consistent with Martin et al.’s (2018) findings where students rated the use of various features in synchronous sessions low in terms of how helpful it was to engage them. Perhaps, reasons for the low rating are time constraints, tool-related issues, and network connection (Park & Bonk, 2007). Additionally, there was agreement between students and instructors on the top two most important and the least important strategies based on the OESQ instrument.

**Other engagement strategies**

Not surprisingly, presence or personal contact was the top category that emerged for most valued engagement strategies. Baker (2010) found a positive relationship between instructor immediacy and presence. One of the instructors wrote, “introducing yourself and then responding to all of the students’ introductions. Establish a rapport as quickly as possible.” Another person indicated:
Consistent instructor presence in the course. This could be through regular video updates, posts to discussion boards, or whatever. However, it must be consistent. Students need to know that the instructor is in the course, reads posts, and provides feedback.

A lot of textual information was the least valued engagement strategy. One instructor wrote, “Too many reading materials that make students overwhelmed by the volume of articles.” Although Ackerman and Goldsmith’s (2011) study was not specific to the online learning environment, they found that students who read print materials scored better than those who read on-screen. Liu (2006) found that students access the reading material electronically; however, they print the material in order to read it.

**Students’ versus instructors’ perceptions**

Instructors rated several strategies significantly higher than learners: the use of virtual lounges, icebreaker discussion, reflections, and peer review; interaction with peers; student moderation of discussions; collaborative activities and projects; and the use of learners’ names in discussion forums by instructors. Students valued some of these strategies; however, they were not as important to them as they were to instructors.

Only one strategy was valued more by students than instructors. Students rated the item pertaining to the posting of due date checklists in each module higher than instructors. Checklists with activities and due dates can assist learners with organizing their time, staying on task, being aware of deadlines for major assignments and activities, and submitting their work on time. Ko and Rossen (2010) also suggest duplicating this information in different areas and to remind students via announcement, email, or text messages.

**Limitations and future research**

There were some methodological limitations. First, the sample size was small and included only 160 cases. However, faculty members from a variety of institutions were invited to participate via email distribution lists. Second, because email lists of professional organizations were used to reach online instructors, it is difficult to determine a response rate. Third, all the data were self-reported. Some online instructors, particularly those new to online teaching, may not use the strategies listed in the OESQ; therefore, their perceptions may be different from more experienced instructors who use several strategies to engage students online. Fourth, the list of engagement strategies is not an exhaustive list. The reader may interpret the results of the study with caution because they may have limited generalizability in different contexts and settings.

Future studies should focus on engagement strategies for blended courses and online courses in order to ascertain differences among learning environments. Additionally, perceptions of online instructors who teach undergraduate courses could be examined.

**Implications**

Results of this study confirm that all three types of engagement (learner–learner, learner–instructor, and learner–content) are important in online teaching and learning. Instructors and students agreed on the importance of several engagement strategies.
Most of the strategies included in the survey were rated as important or very important which reinforces the need to use these strategies in the design and development of online courses. Many options are available to faculty to engage students or increase student engagement. Based on the results, instructors may select and combine a variety of strategies in order to increase student engagement and learning.

The results of this study can assist instructional designers in the design and development of online courses and support their collaborations with online instructors who wish to convert courses from traditional to online environments. Instructors who wish to increase student engagement in online courses may also benefit from the findings. Finally, findings may be of interest to administrators who provide support to faculty and program professional development opportunities for online instructors.

Disclosure statement

No potential conflict of interest was reported by the authors.

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