



Student Perceptions of Engagement's Vital Role in Online Learning



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Scholarship of Discovery

ABSTRACT

In this mixed-methods study, the researchers examined students' perceptions of the importance of engagement using existing learner-to-learner, learner-to-instructor, and learner-to-content frameworks. To optimise the most effective ways to engage online learners, the researchers identified engagement strategies that are most valuable and least valuable conducive to an online learning environment. Furthermore, they sought to understand if there would be any differences in responses based on students' demographics, which include gender, age, and experience with online courses. A total of 48 graduate students in the Teacher Education program at a university in North America were invited to participate in the survey, and 27 students chose to participate. The findings showed that participants highly valued having a choice in reading materials for discussions, consistent instructor announcements and reminders, a dedicated space for student-instructor questions, and relevant assignments. Less valuable were an overemphasis on video content, peer-to-peer discussions, and the grading process. Notably, female participants prioritised individual team member performance more than others, while those aged 21-30 found multi-modal feedback most valuable. Participants who had taken 11-15 online courses especially appreciated student-moderated discussions. The findings in this study warrant further examination into practical implications where learning can be collaborative yet individualised, dynamic, and empowering

KEYWORDS

student experience, students' perspectives, online learning, asynchronous learning, personal presence

HOW TO CITE THIS ARTICLE

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Introduction

Examining the merits of various course designs, from fully in-person to entirely online, asynchronous settings, has been a persistent topic of discussion in both historical and contemporary educational discourse (Muller & Mildenerger, 2021). Students now have a plethora of options in their learning delivery models, a trend expected to persist as learners seek approaches that align with their unique needs and circumstances (Niyomves et al., 2024). Online learning is frequently chosen as a preferred option due to its flexibility in accommodating work, family, and individual situations (Valtonen et al., 2021). Prior research has found that students often choose online, asynchronous learning over face-to-face instruction because it better fits their lifestyle (Waha & Davis, 2014). Consequently, instructors should optimize engagement strategies tailored to the online setting to ensure students' most effective learning experience. This includes focusing on three key aspects of engagement: content, instructors, and peers. It is essential to examine these different facets of student engagement within the context of an individual's learning environment and recognize the unique needs of each learner (Gek Teng Ong & Choon Lang Quek, 2023).

Student engagement in online learning is a complex concept with various design implications. Martin and Borup (2022) categorise engagement into cognitive, affective, and behavioural dimensions. This study focuses on cognitive engagement, viewed as a "critical dimension of online learner engagement" (Martin & Borup, p. 164). Understanding cognitive engagement requires exploring factors that promote self-directed learning, active involvement in activities, and meaningful interactions with peers and instructors (Humber, 2021; Martin & Borup, 2022).

Conceptual Framework

Cognitive engagement can be understood through Moore's (1989) framework, which outlines three key dimensions of student interaction: learner-to-learner, learner-to-instructor, and learner-to-content. This framework provides a valuable structure for exploring teaching strategies that enhance student learning and engagement.

Despite this, online teaching presents challenges, making it difficult for instructors to discern effective strategies for the digital environment (Phirangee, 2016). For instance, students are more likely to be self-directed when engaged with the course content (Kim et al., 2021). Therefore, to foster greater engagement, instructors should design course elements that acknowledge the learner as self-directed and leverage Moore's framework to optimize interaction with content, peers, and themselves. Moore's (1989) three-part interaction framework, though developed decades ago, remains a valuable lens for understanding online learning.

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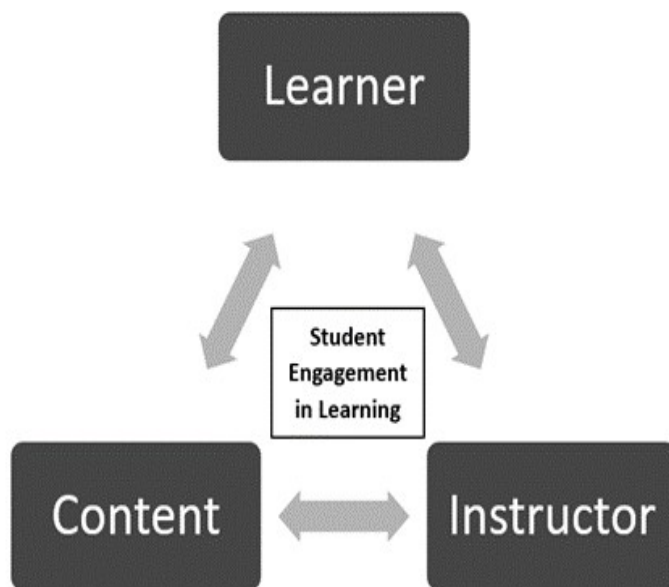


Figure 1: Moore's (1993) Interaction Framework (Adapted from Martin & Bolliger, 2018).

Learner-to-Learner Interactions

This dimension involves strategies that foster meaningful peer interaction during course activities like discussions, group work, and collaborative assignments. It's also crucial to address factors that impede engagement. For instance, a lack of meaningful dialogue, selective listening, poor attribution, unrelated conversations, and cultural exclusion can negatively impact online students (Phirangee, 2016).

Learner-to-Instructor Interactions

Focusing on techniques instructors use to maintain student interest, this construct, now often called "teaching presence," highlights the importance of deliberate course design in optimizing engagement (Garrison & Cleveland-Innes, 2005; Herscu-Kluska, 2019; Oyarzun et al., 2018).

Learner-to-Content Interactions

These interactions emphasize how learners engage with the curriculum to facilitate their cognitive growth (Moore, 1989). They are critically important because they can significantly improve learning outcomes and boost course completion rates (Zimmerman, 2012).

Literature REVIEW

Promoting engagement strategies helps students identify their unique learning needs and objectives, offering contemporary researchers a chance to deeply examine factors that cultivate online engagement and learning. Empirical studies show that ongoing teacher support is critical for an effective

online environment, impacting content quality and both student-to-teacher and peer engagement (Gek Teng Ong & Choon Lang Quek, 2023; Khan et al., 2017). This support includes fostering a positive learning environment, establishing a learning community, providing consistent and timely feedback, using flexible technology, and offering adequate assistance (Chakraborty & Nafukho, 2014).

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Students possess a keen awareness of what aids their learning, especially how it differs between online and face-to-face settings. For instance, while they enjoy online collaboration, students tend to prefer and find face-to-face peer interactions more easily facilitated by instructors (Gek Teng Ong & Choon Lang Quek, 2023). This ability to reflect empowers learners to identify effective approaches, understand course requirements, tailor content to their interests, and maximise learning through peer and instructor interactions.

Research indicates that a learner's expectations, readiness, and engagement significantly predict success in online courses (Kebritchi et al., 2017; Katsarou & Chatzipanagiotou, 2021). Numerous contextual factors also influence how students engage with their learning environment and course content (Garrison & Cleveland-Innes, 2005). Students consistently emphasise the importance of a positive learning environment that fosters personal connections, reduces anxiety, and makes learning enjoyable (Boling et al., 2012; Chen et al., 2010).

Valuable elements for success include access to relevant resources, corrective feedback, peer review, clear assessment rubrics, easily navigable course content, and asynchronous peer interactions (Nagel & Kotze, 2010; Ruey, 2010). A qualitative study by Hews et al. (2022) with higher education students highlighted the growing need for digital competencies, flexible learning options, a sense of belonging, life-load management, emotional well-being, and teacher care and enthusiasm. However, students often acknowledge that personal well-being can lead them to prioritize life situations over academics. Since Muller & Mildenerger (2021) found no differences in learning perceptions between face-to-face and online formats, it's feasible to prioritise student needs while maintaining a rigorous and engaging online learning environment.

Learner-to-learner

Considerable research highlights the social constructive approach as central to fostering online learning communities (Slavin, 1995; Brookfield, 1995). Instructors play a pivotal role in designing online courses that seamlessly integrate learner-to-learner collaboration, shaping positive learning experiences (Maor, 2003; Anderson et al., 2001). Maor further stresses cultivating dynamic, reflective communities where students feel confident taking cognitive risks with peers, navigating successes and challenges collectively.

However, online peer interactions can present significant challenges if not adequately facilitated (Ferguson, 2010). Ferguson's study found that participants highly value peer interactions for sharing perspectives, avoiding isolation, and gaining support. Yet, negative sentiments arose concerning personal relations, availability, and off-task behaviour among peers. Simply providing opportunities for peer engagement isn't enough; it can even create

more challenges. Instructors should strategically maximise peer engagement, perhaps offering student choice as a differentiated approach to meet diverse needs.

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When online courses are designed for effective collaborative learning, students recognise their value and have positive experiences. Robinson et al. (2008) found that online students in collaborative projects acknowledged honing their teamwork skills. This might be because collaborative projects, unlike typical discussion boards or one-size-fits-all approaches, allow students to choose focus areas, affirming unique needs and increasing perceived value in their contributions and personal learning. While discussion boards and forums are viable for enhancing virtual classroom engagement (Neuwirth & Mukherji, 2021), instructors could improve this strategy by offering multiple entry points and flexible engagement options. Flottemesch (2000) also recommended integrating small-group presentations and projects with debriefing sessions to allow students to reflect on their collaborative work, which fosters metacognition and a sense of ownership in their approach to group projects.

Learner-to-content

Engaging with online course material, or learner-to-content interaction, is crucial for successful learning and course completion (Zimmerman, 2012). It might even be the most significant factor in student satisfaction and academic achievement (Katsarou & Chatzipanagiotou, 2021). Despite its importance, this area remains understudied yet critical (Xiao, 2017; Zimmerman, 2012).

Several barriers hinder content engagement, including issues with course design, resource management, communication strategies, and technology implementation. Khan et al. (2017) emphasize that course design and development must precede material delivery, highlighting the vital role of time management and resource utilization. For active engagement, students need to feel comfortable and valued. While significant emphasis is often placed on learner-learner and learner-instructor interactions, more focus on quality and effective content development is warranted, given its pivotal role in student success.

Course designers can adopt several recommendations to enhance student satisfaction with course content. Bonk and Zhang (2006) propose four best practices for learner-centered online environments: reading, reflecting, displaying, and doing.

- Reading: Move beyond traditional text to include multimedia like podcasts, audiobooks, and other online explorations.
- Reflecting: Enable students to apply learning through online blogging, reflections, and self-assessments.
- Displaying: Allow students to showcase their learning via dynamic presentations.
- Doing: Incorporate hands-on activities and simulations.

These opportunities shift students from one-dimensional to multi-faceted learning, offering choice and fostering deeper content engagement. Prioritizing student autonomy is key, as learners often choose content based

on its perceived benefit to their assignment and assessment performance (Murray et al., 2012).

Mukuni et al. (2021) examined male and female learner-to-content engagement across five dimensions: personal interest, narrated lecture videos, interactive assignments, critical thinking assignments, and problem-solving assignments. They found no significant gender differences, noting that both groups highly valued narrated lectures and critical-thinking assignments. Therefore, course design should cater to diverse learners by offering varied engagement methods to minimise learning restrictions.

Learner-to-instructor

Instructors' engagement in their courses and with students fosters positive learning experiences. An active instructor presence notably reduces conflicts and boosts learner interaction (Xie et al., 2013). When educators invest in understanding student needs, they can implement personalised approaches that increase retention (Chen et al., 2010). This means not only engaging directly with students but also knowing them well enough to differentiate content and interactions, making mid-course adjustments intentionally. This personal touch occurs when instructors consistently try to connect with their students.

Students' perceptions of engagement

Understanding students' perceptions of online engagement is vital, as highlighted by Martin and Bolliger (2018), who emphasised the need to identify the most and least valuable strategies. Blakey and Major (2019) describe engagement as active learning strategies like leading discussions, completing WebQuests, and developing authentic projects. College students in their study emphasised the need for important and meaningful work over busy work. Blakey and Major (2019) concluded that instructors must design environments that foster student-led pedagogies, empowering students to connect their interests with course content for active engagement.

Gray and DiLoreto (2016) found that while student engagement with content didn't significantly impact satisfaction in asynchronous courses, instructor presence did influence perceived student learning and satisfaction. Similarly, a survey of 46 preservice teachers during the Spring 2020 transition to online learning (Kanik, 2021) revealed an overall negative perception of online education. Yet, participants reported feeling engaged and performing better academically. However, they also felt disconnected from peers and teachers. This underscores the need for careful course design that clearly articulates both instructor and student roles (Blakey and Major, 2019).

While much research focuses on strengthening engagement, it's equally important to acknowledge factors that can weaken it in online classes. Phirangee (2016) identified seven negative interactions: overinvolved students, superficial peer engagement, perceived favouritism, misattribution of work, off-topic discussions, use of AI impacting authenticity, and cultural exclusion. This list is crucial for instructors to recognise, as well-intentioned engagement efforts can inadvertently backfire. These challenges may not be immediately obvious but knowing what to look for can reduce student discouragement and foster authentic engagement. Moreover, seeking safe

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student input on what they find helpful or unhelpful, free from inherent power imbalances, is essential.

This study intentionally delves into the nature and impact of learner-to-learner, learner-to-content, and learner-to-instructor interactions within online learning. It aims to uncover students' motivations as self-directed learners. Building on the work of Garrison and Cleveland-Innes (2005), Bonk and Zhang (2006), and Pi and Hong (2017), this research applies Moore's (1993) framework to assess students' perceptions of these key interactions in an online course.

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Research Questions

Previous research indicates online students prefer asynchronous learning for engaging with content, peers, and instructors when given the choice (Henrikson & Baliram (2023)). Building on this, our current study explores student perceptions of engagement's importance across learner-to-learner, learner-to-instructor, and learner-to-content strategies.

We hypothesize that students will value collaboration, learning autonomy, choice, clear content and instruction, and regular instructor check-ins as key engagement drivers. Given fewer natural engagement opportunities online, it's crucial to identify the most and least valuable engagement strategies from students' perspectives.

This study also examines how responses differ based on gender and online course experience. While we anticipate no significant gender differences, we expect students with extensive online experience to highly regard learning autonomy. We adapted a survey similar to Martin and Bolliger (2018) to address the following research questions:

1. What strategies do students perceive as important for enhancing learner-to-learner, learner-to-instructor, and learner-to-content engagement in the online environment?
2. Which strategies do students identify as most and least valuable for engaging them in the online learning environment?
3. Are there differences in responses based on individual characteristics like gender, age, and online course experience?

Methodology

Participants

Forty-eight graduate students from a liberal arts university's teacher education program were invited to participate. These students were enrolled in one of two education courses, spread across three sections. The "Learners in Context" course (two sections) focused on understanding student learning, attitudes, and behaviors to inform instructional planning. The "Survey of Instructional Strategies" course examined research-based strategies for diverse learners.

In both course syllabi, instructors disclosed their interest in understanding student perceptions of engagement across learner-to-learner, learner-to-instructor, and learner-to-content strategies, specifically identifying the most and least valuable online engagement strategies. Students were invited to complete the anonymous survey during week 7 of an eight-week quarter Week 7 . Instructors reiterated that participation was optional and would not affect their course grade.

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Of the 48 students, 27 chose to participate (56.25%). Sixteen students identified as female (59%), eight as male (30%), and three preferred not to respond (11%). Their ages ranged from 22 to 46, with a mean age of 29.70. Table 1 shows the age range of the participants.

Table 1: Participant Age

Age Range	Percent (%)
21-25	26
26-30	26
31-35	19
36-40	7
41-45	4
46-50	4
Prefer not to answer	14

The Teacher Education program consisted of two main cohorts: the Accelerated Master of Arts in Teaching (AMAT), designed to be completed in one year, and the Master of Arts in Teaching (MAT), completed over two years. Of the 27 participants, 25 were enrolled in the AMAT cohort, with one participant in Year 1 and one in Year 2 of the MAT cohort. Participants held a range of endorsements, as detailed in Table 2. Table 3 provides a breakdown of participants' prior experience with online courses.

Table 2: Endorsement

Endorsement	Count
Social Studies	8
English Language Arts	5
Arts (visual/music/PE)	4
Elementary	3
English & Art	1
Social Studies & English	1
Science	1
Prefer not to answer	4

Table 3: Number of Online Courses

Number of Online Courses	Percent (%)
0-5	19
6-10	15
11-15	26
16-20	11
20+	26
Prefer not to answer	3

Data Collection

The two sections of one course and one section of second, were taught in the summer over eight weeks. Data was collected during week seven via the online survey developed by Martin and Bolliger (2018) about their perceptions of the importance of engagement through learner-to-learner, learner-to-instructor, and learner-to-content strategies. The students were given one week to complete the survey using Microsoft Forms. The researchers briefly introduced the survey outlining its purpose. They emphasised that the data collected will be anonymous, kept strictly confidential, and optional. Institutional review board (IRB) approval was also obtained.

Instrument

The researchers replicated Martin and Bolliger's (2018) study, using their 29-item, 5-point Likert scale survey without modification. The survey, taking about 10 minutes to complete, was organised into three subscales: learner-to-learner, learner-to-instructor, and learner-to-content.

Cronbach's Alpha internal reliability for the full 29 items was strong ($\alpha=.89$). Subscale reliabilities were: learner-to-learner ($\alpha=.616$), learner-to-instructor ($\alpha=.929$), and learner-to-content ($\alpha=.913$).

Beyond the Likert scale, the survey included three open-ended prompts asking students to identify their most valuable, least valuable, and any other beneficial online learning strategies. Five demographic questions gathered information on gender identity, program, endorsement, age, and online course experience. Students had one week to complete the survey, with each response assigned a numerical identifier for tracking.

Data Analysis

This mixed-methods study utilised both qualitative and quantitative data from all 27 participants. We used descriptive statistics (mean and frequency) to report student perceptions of engagement strategies. Shapiro-Wilk tests confirmed the data's normality. Independent samples t-tests were conducted to explore differences in responses based on gender, age, and online learning experience. Qualitative data from open-ended prompts were analysed using

inductive coding to identify recurring themes which are presented in the results.

Results

Engagement Strategies

The study analysed quantitative data from 29 Likert-scale items (1-5) and qualitative data from three open-ended prompts. Respondent scores on the Likert items ranged from 43 to 145 (M=111.67, SD=25.22).

These 29 items addressed the first research question regarding perceived important strategies for enhancing learner-to-learner, learner-to-instructor, and learner-to-content engagement online. The overall mean score for these items was 3.86 (SD=0.88), with scores ranging from 1.48 to 5.

Learner-to-Learner Subscale Highlights

Table 4 details the mean scores for the learner-to-learner subscale.

Item 5: "Students have choices in the selection of readings (articles, books) that drive discussion group formation" had the highest mean score (M=4.11, SD=1.28), and was the only item above 4.0. Over 74% of respondents (n=20) considered this either very important or important.

Item 4: "Students moderate discussions" had the second-highest mean score (M=3.96, SD=1.22). Over 74% of respondents (n=20) found this very important or important.

Item 7: "Students interact with peers through student presentations (asynchronously or synchronously)" followed with a mean score of 3.89 (SD=1.01). This item had the highest percentage (78%, n=21) of students who felt peer interaction through presentations was very important or important.

Table 4: Learner-to-Learner Subscale Mean and Standard Deviations.

#	Item	M	SD
1	Students use a virtual lounge where they can meet informally to share common interests.	3.00	1.36
2	Students complete an integrated profile on the Learning Management System that is accessible in all courses.	3.37	1.04
3	Students introduce themselves using an ice-breaker discussion.	3.78	1.37
4	Students moderate discussions.	3.96	1.22
5	Students have choices in the selection of readings (articles, books) that drive discussion group formation	4.11	1.28

6	Students post audio and/or video files in threaded discussions instead of only written responses.	4.59	1.42
7	Students interact with peers through student presentations (asynchronously or synchronously).	3.89	1.01
8	Students work collaboratively using online communication tools to complete case studies, projects, reports, etc.	3.70	1.23
9	Students peer-review classmates' work.	3.48	1.37
10	Students are required to rate individual performance of team members on projects.	3.41	1.39

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Note: Scale range from 1 (*very unimportant*) to 5 (*very important*)

On the learner-to-instructor subscale (Table 5), items 12 and 13 received the highest mean scores (M=4.33, SD=1.27 and 1.24, respectively). Specifically, 89% of respondents (n=24) found regular instructor announcements or email reminders either very important (n=18) or important (n=6). Similarly, 81% (n=22) felt an instructor-created forum for questions was very important (n=19) or important (n=3).

Item 19, "posting rubrics for assignments," followed closely (M=4.30, SD=1.14), with 85% of students (n=21) deeming it very important (n=16) or important (n=7). Notably, seven of the ten items in this subscale (items 11-16, 19) had mean scores above 4.0.

Table 5: Learner-to-Instructor Subscale Mean and Standard Deviations

#	Item	M	SD
11	The instructor refers to students by name in discussion forums.	4.04	1.45
12	The instructor sends/posts regular announcements or email reminders.	4.33	1.27
13	The instructor creates a forum for students to contact the instructor with questions about the course.	4.33	1.24
14	The instructor creates a course orientation for students.	4.15	1.23
15	The instructor posts a "due date checklist" at the end of each instructional unit.	4.15	1.29
16	The instructor creates short videos to increase instructor presence in the course.	4.00	1.21

17	The instructor provides feedback using various modalities (e.g., text, audio, video)	3.89	1.15
18	The instructor provides students with an opportunity to reflect (e.g., via a journal or surveys).	3.70	1.10
19	The instructor posts grading rubrics for all assignments.	4.30	1.14
20	The instructor uses various features in synchronous sessions to interact with students (e.g., polls, emoticons, whiteboard, text, and audio and video chat).	3.67	1.36

Note: Scale range from 1 (*very unimportant*) to 5 (*very important*)

On the learner-to-content subscale (Table 6), item 29, "students working on realistic scenarios that apply with the content," had the highest mean score (M=4.41, SD=0.89). A substantial 89% of respondents (n=24) rated this as either very important (n=16) or important (n=8).

Closely following was item 24, "discussions structured with guiding questions and/or prompts to deepen understanding of the content," (M=4.30, SD=1.03). Here, 85% of students (n=23) found this very important (n=15) or important (n=8).

Table 6: Learner-to-Content Subscale Mean and Standard Deviations

#	Item	M	SD
21	Students interact with content in more than one format (e.g., text, video, audio, interactive games or simulations).	3.81	1.21
22	Students use optional online resources to explore topics in more depth.	3.70	0.91
23	Students experience live, synchronous web conferencing for class events and/or guest talks.	3.22	1.12
24	Discussions are structured with guiding questions and/or prompts to deepen their understanding of the content.	4.30	1.03
25	Students research an approved topic and present their findings in a delivery method of their choice (e.g., discussions forum, chat, web conference, multimedia presentation).	3.81	1.08
26	Students search for and select applicable materials (e.g., articles, books) based on their interests.	3.85	1.10

27	Students have an opportunity to reflect on 4 elements of the course (e.g., use of communication tools, their learning, team projects, and community).	4.04	1.09
28	Students work on realistic scenarios to apply content (e.g., case studies, reports, research papers, presentations, client projects).	4.41	0.89
29	Students use self-tests to check their understanding of materials.	3.81	1.10

Note: Scale range from 1 (*very unimportant*) to 5 (*very important*)

The learner-to-instructor subscale had the highest mean value ($M = 4.06$, $SD = 1.02$). This suggests that, despite the pandemic experience, online learners valued strategies that facilitated interaction between the learner and instructors. Table 7 below shows the means and standard deviations for each subscale.

Table 7: Means and Standard Deviations for Subscales

Subscale	M	SD
Learner-to-learner	3.63	0.96
Learner-to instructor	4.06	1.02
Learner-to-content	3.89	0.81

Most Valuable Strategies

The survey's three open-ended questions addressed the second research question, focusing on the most and least valuable online engagement strategies. Students provided 37 responses across two prompts: "What is the most valuable strategy to engage you as an online learner?" and "What strategies not included in this questionnaire are beneficial to you as an online learner?". These responses were categorised into nine strategies, aligning with the learner-to-learner, learner-to-instructor, and learner-to-content framework, as detailed in Table 8.

Table 8: Most Valuable Engagement Strategies

Learner-to-learner	Learner-to-instructor	Learner-to-content
Peer Interaction	Clear Communication with Instructor	Multimodal Engagement
Personalization	Feedback & Reflection	Variety of Learning Materials
	Timing of assignments and due dates	Interactive Learning
		Real-world Application

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Students identified several key strategies for effective online engagement, consistently favouring multimodal approaches and clear instructor communication.

Multimodal engagement was highly valued, with students appreciating diverse content formats like short videos, podcasts, articles, discussion boards, and graphic organisers. The flexibility of asynchronous learning, which allows them to manage their own pace while meeting deadlines, was also a significant preference.

Clear communication with the instructor was overwhelmingly seen as valuable. This included timely feedback, explicit instructions with due dates, weekly announcements, and accessible office hours. Students particularly appreciated instructors releasing major assignment details in advance, enabling them to produce higher-quality work.

Within the learner-to-learner framework, students valued personalisation and effective peer interaction. They appreciated personalised feedback and choice in assignment formats. Access to various collaboration tools like dedicated discussion boards, Google Docs, and synchronous platforms (Zoom/Teams) was also beneficial. Small group collaboration was especially favoured in larger classes.

Under the learner-to-instructor framework, feedback and reflection opportunities, alongside clear assignment timing and due dates, were crucial. Students felt most engaged during synchronous virtual meetings that facilitated peer interaction and instructor support. They also valued having the course schedule available from the start, frequent announcements, reminders, and personalised feedback. Additionally, note-taking while consuming content and receiving instructor feedback on reflections were highly regarded.

Finally, within the learner-to-content framework, a variety of learning materials, interactive learning, real-world application, and multimodal engagement were highlighted. Students valued engaging with content through various modes, working at their own pace, and having access to videos, screencasts, and audiobooks with captions/transcripts. Brief instructor

lecture videos were also appreciated. The practicality and real-world applicability of assignments made them feel more worthwhile.

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Least Valuable Strategies

When asked to identify the least valuable online engagement strategies, 23 responses fell into six categories, aligning with the learner-to-learner and learner-to-content frameworks (Table 9). The most frequently cited least valuable strategy (eight responses) was an overemphasis on video content. One student specifically commented that "watching a pre-recorded lecture overview of the content we're going to be engaging with in the module" was unhelpful. Peer discussions and grading were also widely considered less valuable, with students noting they found feedback from the instructor significantly more useful.

Table 9: Least Valuable Engagement Strategies

Learner-to-learner	Learner-to-content
Peer to Peer Discussions and Grading	Passive Content Consumption
Cooperative Online Work Challenges	Overemphasis on video
Obligatory Discussion Boards	Online Reading Quizzes

Individual Differences

Research utilised the survey's five demographic items (gender, program, endorsement, age, and online course count) to address the third research question: Are there differences in responses based on individual characteristics, such as gender, age, and online course experience?

Gender

An independent samples t-test (assuming unequal variances) revealed a significant difference for item 10, "rating individual performance of team members on projects," where females (M=3.75) considered it more important than males (M=2.5), $t(8,16)=2.28, p<.05$. Interestingly, males who had taken over 20 online courses found this item most valuable. Future research could explore the impact of using rubrics for evaluating group contributions on gendered perceptions.

Age

Participant ages ranged from 22 to 46. Those aged 21-25 and 26-30 highly valued item 17, "the instructor provides feedback using various modalities." These age groups also found student-moderated discussions (item 4) and choice in discussion reading selections (item 5) most valuable. There were no other significant age-based differences across the survey items.

Experience with Online Classes

Participants were categorised into five groups based on their prior online course experience. Students who had taken 11-15 online courses found student-moderated discussions (item 4) most valuable. This group, along with those who had completed over 20 online courses, also highly valued using a

virtual lounge for informal social interaction (item 1). Additionally, participants aged 31-35 with 11-15 online courses considered instructors providing feedback via various modalities (item 17) to be most valuable.

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Discussion and Implications for Practice

Several themes from our results warrant further investigation within Moore's (1993) framework for learner-centered interaction, specifically regarding learner-to-learner, learner-to-instructor, and learner-to-content engagement. Our findings consistently suggest that high levels of student choice are crucial for a well-designed online course and a rich student experience, aligning with previous research despite our low response rate (Martin & Bolliger, 2018; Waha & Davis, 2014).

Learner-to-Learner Engagement

Analysis of learner-to-learner interactions revealed valuable insights. Mandatory small group projects, especially those with individual component accountability, often hindered learning. Students highly valued the freedom to choose their groups and autonomy in peer and content interaction. This reinforces Maor's (2003) emphasis on offering students collaborative opportunities with choice in peers and topics; without it, activities can feel inauthentic and obligatory.

T-test results showed gender-related differences, with female students prioritising individual performance ratings of team members more than males. This suggests females feel a greater sense of responsibility and accountability for group work, experiencing challenges more acutely. Therefore, considering group dynamics and gender variations when forming student groups is crucial.

As Robinson et al. (2028) noted, effective collaborative projects benefit online students by fostering a sense of community learning. To prevent students from feeling burdened by teammates' actions, individual accountability for contributions is essential. When choice in group members and topics isn't possible, we recommend implementing a transparent, useful individual accountability measure for both instructors and students.

Instructor Presence

Examining learner-to-instructor interactions offers significant insights into teaching practices. Notably, no strategy for instructor interaction was deemed least important, suggesting that all interactions between instructors and students are vital, and high instructor engagement is critical.

High mean scores for items like regular announcements, timely feedback, clear communication, and detailed rubrics indicate students feel most supported and engaged when instructors are accessible and communicative. This aligns with previous research (Preisman, 2014; Xie et al., 2013).

While interactive tasks and supportive classmates foster curiosity and peer learning, a dedicated and approachable instructor remains the cornerstone of a thriving environment. Their clear explanations, interactive activities, weekly updates, and timely, personalised feedback help students grasp complex concepts and stay motivated. An instructor's passion for the subject

encourages deeper exploration and independent learning. As Chen et al. (2010) validated, an engaged instructor transcends the role of teacher, becoming a mentor, motivator, and learning partner.

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Learner-to-Content Engagement

Examining learner-to-content engagement yielded several compelling insights. A recurring theme was students' desire for content directly applicable to their educational context, helping them gauge their learning readiness. In short, authentic learning experiences highly motivate students, aligning with research emphasizing contextual relevance (Edwards & Clinton, 2019; Kebritchi et al., 2017; Kim et al., 2001; Martin & Bolliger, 2018).

Students preferred discussions that moved beyond traditional formats, valuing opportunities to apply learning through case studies, reports, presentations, and projects relevant to their teaching context. This approach not only met student priorities but also deepened content exploration, fostering a more meaningful experience.

Conversely, students showed less enthusiasm for video and multimedia that didn't directly contribute to the core content, a finding supported by Preisman (2014). Using multimedia solely to "engage" was seen as a hindrance, not an enhancement. This underscores that multimedia strategies must align with and genuinely improve the learning experience.

Students also emphasized the importance of reflection in their learning and within the content itself. As Bonk and Zhang (2006) proposed, students seek learning environments that promote reflection, case studies, simulations, and real-world application, all supported by effective instruction. This insight highlights the need to create avenues for student feedback and to foster reflective practices.

Conclusion

This study has several limitations worth acknowledging. The small sample size of 48 graduate students, all from courses taught by the researchers, limits the generalizability of our findings. Future research should explore group differences within larger, more diverse samples, ideally examining students from varied cultural and ethnic backgrounds. Additionally, further research is needed in disciplines like engineering, chemistry, and mathematics, where online engagement can be particularly challenging. Such investigations could offer deeper insights into nuanced preferences and effective instructional strategies across different demographic groups.

Another limitation is self-reported bias. Our reliance on self-reported data means students might have responded in a way they perceived as expected, especially since their instructors were the researchers. Although participation was optional and didn't affect grades, subtle influences might have still impacted responses.

Comparing our results to Martin and Bolliger's (2018) original study was challenging due to differing sample sizes. However, an interesting observation regarding gender differences emerged. Only one item showed a significant gender difference in each study, but the specific item varied. In the original

study, females valued additional online resources for in-depth exploration more than males. In our study, females considered individual accountability for group work more important than males.

Examining the three facets of learner engagement holistically reveals compelling avenues for future research and practical implementation. For learner-to-content strategies, future research could focus on adapting content and instructional practices to individual learning styles, preferences, and goals. For learner-to-learner engagement, effective collaborative learning models and leveraging group interaction and accountability are crucial. By deepening innovative practices, we can revolutionise learner engagement, creating a future where learning is collaborative yet individualised, dynamic, and empowering.

The instructor's presence as a facilitator of learning and a clear communicator of expectations and course design cannot be understated. While online platforms offer flexibility, it's the dedicated instructor who transforms the experience from passive content consumption into active exploration and meaningful learning. Future research should move beyond delivery debates, focusing instead on equipping instructors with tools and strategies that truly engage learners.

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