

Asynchronous Online Discussion Forums: Effective Undergraduate and Graduate Course Approaches

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Abstract. Asynchronous online discussion (AOD) can provide an interactive educational experience through formation of learning communities that enable students to develop professional knowledge and critical thinking skills as they engage with colleagues and instructors. We find significant differences between undergraduate and graduate student perceptions of the efficacy of AOD. In this paper, we explore the pedagogical benefits of AOD and describe considerations that guide how they are designed and managed effectively and efficiently. Additionally, we report the results of a survey that measures student perceptions of the extent to which AOD provided a positive educational experience and contributed to their learning.

Developing the skills to nurture professional outcomes is vitally important to ensure that online programs retain the level of quality associated with face-to-face instruction. Numerous researchers (see Johnson & Aragon, 2003; Kolb & Kolb, 2005; Strang, 2010; and Tatsis & Koleza, 2006) argue that student interaction is a key element in enhancing their online learning experiences. Major accrediting bodies (e.g., AACSB and DEAC) agree that increasing student interaction and promoting critical thinking should be top considerations when designing and delivering professionally oriented courses.

In pursuit of these goals, many instructors use asynchronous online discussion (AOD) forums. There are many benefits of this approach to encourage learner engagement. These benefits include the promotion of collaborative knowledge construction and higher-order critical thinking (Galikyan & Admiraal, 2019), enhanced relevancy of course content (Xin & Feenberg, 2006), the opportunity to practice professional writing skills (Caulfield, 2011), extended time to form thoughtful responses (Hull & Saxon, 2009), and the chance to practice effective peer interaction, which is an essential skill required in the workplace (see Chien, 2004; Ellinger, 2004; Kessels & Poell, 2004).

Using AOD can help address online learners' self-reported feelings of isolation. Numerous researchers (e.g., Garrison et al., 2001; Glenn et al., 2003; Morgan & Tam, 1999) note that online learners report feelings of isolation due to being physically distanced from their institutions. Song et al. (2004) surveyed seventy-six graduate students and found that a perceived lack of community was a significant concern. In addition to building a sense of community and belonging, AOD forums may also help naturally introverted students better express their opinions (see Amichai-Hamburger et al., 2002; Caspi et al., 2006), which establishes a level playing field for all students regardless of their natural assertiveness. Garrison et al. (2001) further reinforce the reduction in feelings of isolation due to both peer and instructor

presence. Many online learners are hungry for social presence, and AOD is one way to satisfy that desire (see Rovai, 2007).

Importantly, many studies have found students' perceptions of asynchronous online discussion forums to be decidedly positive. Vonderwell et al. (2007) find that students value AOD as a vital part of their online education. Hamann et al. (2012) confirm that students prefer online discussions over live whole-class discussions. Wu and Hiltz (2004) find that students reported especially enjoying the flexible and convenient format offered by asynchronous delivery. Strang's (2011) empirical analysis finds a statistically significant relationship between increased use of AOD and academic performance in online business classes; however, Strang acknowledged that factors other than the inclusion of AOD might have contributed to elevated performance. Rovai's (2003) survey of graduate students finds that AOD increases self-reported satisfaction that educational goals are being met. Additionally, Meyer (2003) finds that graduate students spend more time on AOD than on face-to-face discussions and that they appreciated the extra time for reflection on course content. In summary, there are solid pedagogical reasons supported by empirical research for online courses to feature AOD as a central instructional component.

Much of the extant literature on AOD considers specific perspectives and reports idiosyncratic findings. In our paper, we endeavor to tie them together and synthesize their findings to create a comprehensive approach to developing AOD techniques to enhance professional outcomes. The primary gap that our research addresses is moving from an understanding that AODs are a useful pedagogical tool to using this as a vehicle to drive students toward desired professional behaviors through the use of a well-crafted rubric and academic-level appropriate instructor engagement. Additionally, we offer our practical method of managing AODs in undergraduate and graduate courses and present course-level and structural design elements for both applications. The heart of our study is our report of the results of a 12-question survey measuring student perceptions of the effectiveness of our approach.

Methods

Course-Level Design

In a study of award-winning online instructors, Martin et al. (2019) find that systematic design is the key to creating an effective online course. Song et al. (2004) find that course design and learner motivation are two of the biggest contributors to success. Pelz (2010) reminds instructors that online learners are more responsible for what they learn, in a class, than the instructor. An instructor can present a tremendous learning experience and encourage students to take advantage of it, but the online learner must actively choose to engage with the course content. AOD represents an effective way to encourage active engagement and increase the motivation of students to learn. We find the instructional design framework presented by Czerkowski and Lyman (2016) to be useful in fostering student engagement in an online learning environment: beginning with instructional needs and objectives, creating an interactive learning environment, collecting feedback on student learning, and conducting a summative learning outcome assessment to evaluate instructional effectiveness.

Participation is a major part of active engagement. Aloni and Harrington (2018) identify a lack of high-level student participation as a key challenge for successful AOD. They propose addressing this challenge by having instructors effectively communicate the value of the discussions, set clear expectations for participation, and design the structure of the discussion to encourage the desired level of participation. The payoff to students (i.e., social interaction, self-directed discovery (see Baker, 2013)), enhanced content awareness, an opportunity for self-reflection (see Chadha, 2017), and a chance to practice professional written communication, should be clearly articulated before the first discussion occurs.

Most online learners lead very busy lives. Their recognition of the value of AOD forums is critical. Lee (2013) argues that instructors should clearly communicate the importance and purpose of AOD forums to enhance student motivation. Furthermore, students will be more likely to take the AOD learning opportunities seriously if course point weightings clearly reflect the importance of this pedagogical tool. Rovai (2003) argues that student motivation for discussion forum participation will be enhanced if the discussions account for between 10% and 20% of the course grade. In our approach, we have employed weightings ranging from 10% (an essential element in our undergraduate application) to 40% (a pedagogical centerpiece in our graduate application). Based on our experience, we have found that these percentages appropriately emphasize the importance of AOD within the context of each course while still allowing room for other measures of content mastery.

Structural Design

Structural design considerations focus on the ways in which an AOD is specifically used to reinforce course learning objectives. They should center on *student engagement* and facilitate the development of *critical thinking* skills. In our experience, designing discussions to be used in every lesson facilitates comprehensive coverage of course objectives and promotes learner curiosity. Additionally, it helps students develop a cadence and an understanding that a discussion will accompany each aspect of course content. Prompts that are crafted to promote self-exploration and real-world application are also essential elements.

Student engagement is a function of the extent to which they engage not only with the course material, but also their classmates and their instructor (Martin et al., 2019). When students are engaged with others, learning communities develop naturally from the reciprocal exchange of ideas. Students will develop and sharpen their critical thinking skills through such engagement, especially when it is shaped to encourage students to expand upon others' ideas, challenge them, or add insights so that a valuable conversation results. We deploy differing levels of engagement depending on whether the class is for undergraduate or graduate students.

Garrison and Cleveland-Innes (2005) used a Study Process Questionnaire to show that discussion design has a significant impact on student interactions and their self-investment in deep thought. Strong AOD design can create an open forum for critical discovery surrounding class content with application to real-life scenarios. When conducted appropriately, students will learn from their peers and from processing their own ideas in a format that permits more time than during a synchronous class session (see Arend, 2009; Szabo & Schwartz, 2011). Accordingly, we

discourage the use of the terminology “discussion board” because it suggests that the AOD is static and that students are only required to make a “check the box” contribution to harvest a grade. Instead, we prefer to use the label “discussion forum,” which connotes a dynamic experience and lets students know that the expectation is for an exchange of ideas and perspectives.

Mason (2017) identifies two potential weaknesses relative to sizing considerations in AOD design: (1) having an overwhelming number of responses that students must read, and (2) the possibility of a discussion becoming dominated by one (or a small number of) participant(s). Having too many students assigned to a discussion group can cause either attention overload or social loafing (see Bertucci et al., 2010; Lowry et al., 2006). In both occurrences, students will decrease their perception of responsibility in group communications. Additionally, Bertucci et al. (2010) argue that large groups make forming social connections more difficult, and Lowry et al. (2006) add that fear of criticism will also be higher in large groups.

Previous studies have recommended that instructors address the critical design element of size by forming small discussion groups with only three to five students (see Akcaoglu & Lee, 2016; Kim, 2013; Qiu et al., 2014; Rovai, 2002). As a practical matter, we have found that discussion forums composed of only a handful of students represent a major logistical challenge in larger classes. Our guidance for instructors is to size groups so that they are large enough to accommodate diverse perspectives yet small enough so that students feel a connection to their classmates and do not become overwhelmed by the sheer number of contributions. Group sizing should also be based on the types of discussion prompts posed to students. Those that have a wider spectrum of possible answers can support a larger group size. In both undergraduate and graduate applications, we typically assign between 12% and 20% of the class to each group, which amounts to five to seven students per group in the undergraduate class and ten to twenty students per group in the graduate class. Based on our experience, we find these group sizes represent a “sweet spot” that balances the need to encourage student participation and elicit multiple valuable perspectives with minimizing free-riders and student feelings of being overwhelmed. Ultimately, sizing discussion groups is a matter of instructor preference with an intentional goal to encourage meaningful discussion.

Properly crafted discussion prompts are also critical to effective AOD forum design. The conventional recommendation is to use the Socratic method of instruction, which guides student exploration with questions. Paul and Elder (2016) argue that this technique encourages students to reach their own conclusions rather than have the instructor digest content for them. Discussion prompts should focus on the higher levels of Bloom’s taxonomy, specifically targeting analysis, synthesis, and evaluation (see Bradley et al., 2008; Ertmer et al., 2011). Research also suggests that discussion prompts that are focused on expanding class concepts produce better results than do generic discussion topics designed to encourage general peer interaction (see O’Reilly et al., 2007; and Strang, 2011). An example of a prompt from our undergraduate application is for students to discuss systematic risks that are or could influence financial markets. This prompt is designed to encourage students to personalize course content and to search the real world to apply a theoretical concept. In our graduate application, we commonly ask students to apply a strategic concept to the firm at which

they currently work. At a high level, we advocate for discussion prompts that solidify theoretical concepts through practical application and focus on asking “why” and “how” questions whenever possible, with less reliance on “what” questions. In that way, higher-level critical thinking is elicited, and discussion forum richness and depth (as a complement to breadth discussed earlier in this paper) will be maximized.

Additionally, we argue that one of the most powerful ways to motivate student involvement and clearly communicate the instructor’s professional expectations is to build a strong rubric. Numerous researchers (see Andrade, 2000; Eryilmaz et al., 2015; Gilbert & Dabbagh, 2005; Martin et al., 2019; Panadero & Jonsson, 2013; Penny & Murphy, 2009; Rovai, 2007) agree that a grading rubric that outlines assignment expectations is critically important. Gilbert and Dabbagh (2005) specifically argue that using a rubric will improve the quality of student responses. In agreement with Scarlett (2018), we have found that a detailed rubric establishes expectations by delineating evaluation criteria and associated levels of achievement that support standards-based evaluation. Rubrics also provide an evaluation template for the instructor that is perceived as objective by students, and they provide valuable developmental feedback to students. From the perspective of the instructor, using a rubric makes grading efficient and objective. One of the primary motivations of this paper is to encourage the development and use of robust rubrics that drive professional outcomes. This will be discussed in a later section, but our rubrics appear in Appendix A.

Managing AODs

Instructor involvement plays a critical role in motivating professional discussions (see Wu & Hiltz, 2004). Pelz (2010) argues that there are two elements of instructor presence: facilitating and directing. Facilitating involves prompting discussion as well as encouraging, acknowledging, and reinforcing student contributions. Directing includes focusing the discussion, injecting outside knowledge, responding to student questions, and summarizing the discussion. In short, facilitating and directing are akin to coaching, which requires an instructor’s commitment. It is essential for students to have instructor direction and timely feedback (Martin et al., 2019; Rovai, 2007).

However, in the process of providing timely feedback, instructors should be careful to not dominate the discussion (Dennen, 2005; Rovai, 2007; Thompson, 2006). Rovai (2007) specifically argues that instructors should not step into discussions too quickly and when they do, they should ask probing questions to elicit critical thinking. If an instructor comments too much or too frequently, the discussion can collapse. If they say nothing, then an erroneous thought can go unchecked. If an instructor thoughtfully encourages discussion and prods movement toward the desired outcome, then a better outcome can be achieved.

In our experience, instructors should provide an appropriate level of interaction while not dominating the discussion, thereby supporting the development of a learner-centered community of learning (Lim, 2004). We present two applications of instructor involvement below. The first example is a fully online undergraduate investments class. In this application, the instructor permits students to freely discuss topics and makes private comments to students to address any concerns raised during

the forum. Additionally, the instructor provides the entire class with the instructor's responses to the discussion prompts after the discussion has concluded. In the second example, which is a fully online graduate-level management course, the instructor actively engages with students to encourage deeper thought while leaving room for student-driven discussion. In this graduate course, the instructor's approach is that of a curator as well as a mentor and evaluator.

Undergraduate Course Application

The undergraduate application is an upper division, required course for Finance majors. It also serves as an upper division elective for non-finance majors. The students are in an online program, and most are working while taking classes. This course has a heavy workload with experiential projects. Students receive very detailed feedback on these experiential projects, which is one reason why a more hands-off approach has been taken with instructor participation in the AOD forums. In agreement with research done by Arend, 2009; Jeong, 2004; Lam, 2004; and Rovai, 2007, we hold an ice breaker activity before any AOD forums are assigned. The purpose of this activity is to create a sense of community in an otherwise asynchronous online course. We require students to participate in an asynchronous introduction forum in which they are asked a series of questions geared toward introducing themselves to the class and disclosing their prior educational or professional experience with class content. Additionally, we add a few lighthearted questions (e.g., What is your favorite ice cream flavor? or What is your favorite fictional character?) to help with student interest.

Our weekly asynchronous discussions have gone through a transformation over time. Following the guidance of Rovai (2003), our discussion forums have always maintained a class point weight of 10-15% depending on the semester in which the class is offered. Following Black (2005) who recommends using staggered deadlines rather than one due date for an assigned discussion to promote greater student engagement, our AOD approach also uses staggered deadlines. Originally, our AOD rubric for the fully online undergraduate class (see Table A.1 in Appendix A) was designed to reward contributions made throughout the assigned week. There were no deductions for content errors. Students were encouraged to freely discuss topics within a small group of five students.

Initially, we would actively participate in discussions by responding to student posts during the week. The intention was not to directly answer student questions but to prompt further thought. In this undergraduate context, our involvement during the forum had the undesired effect of slowing group communication. As a result, we shifted to a feedback model of responding to students via email (or assignment comments) during (or after) the forum to encourage deeper involvement and to correct content concerns. This technique proved useful for students. It should also be noted that peer interactions during the forum would self-correct many content issues as well. Natural thought leaders would emerge in each group to support self-policing.

A clear problem with the rubric presented in Table A.1 is that the AOD forums became a completion assignment. As our understanding of AOD evolved, we changed our approach from a completion-style project to one that focused on more defined

professional outcomes. The amended rubric in Table A.2 (Appendix A) was developed in response to our evolving approach to AOD. Note that the number of posts required dropped from five to four per week. The intention was to focus on quality rather than quantity. Using a source to support an argument is now incorporated into the professionalism scores, which now comprises 40% of the assignment's grade. By heavily weighting the professionalism score, students are directly incentivized toward the desired outcome. While the professionalism score may introduce some instructor subjectivity, we argue that promoting critical thinking, thought leadership, well-crafted responses, and sources to support points made encourages students to the desired outcome; additionally, it adds the element of the instructor's seasoned professional judgement.

Students are naturally competitive, and they are hungry to hone their skills and move up from "professional" to "executive." In order to make this jump, students need to focus on depth of thought, evidence of critical thinking, supporting points made with reputable sources, and thought leadership within their groups (refer to Appendix A, Table A.2). Consequently, at the beginning of the semester, students receive an email from us giving them examples of prior students' responses to discussion prompts that satisfy the requirements of different professionalism categories. During the semester, most discussions are organized into small groups, but periodically, the discussion prompts are organized for a class-wide response (e.g., strategies in a trading simulation). All students can benefit from seeing their peers' responses to the class-wide questions. After some discussions have concluded, we send an email to the entire class praising students whose work has reached the executive level as a means of encouraging other students to review the work of their peers to improve their own discussion contributions.

Graduate Course Application

The graduate application is the capstone course of an online program in which students are accustomed to working remotely and more experienced in establishing peer networks. Accordingly, an ice breaker exercise was not applied. Before the first AOD forum, students are advised strongly to read the course syllabus and an introductory announcement that the instructor posts in the course. These documents emphasize that discussion is valued as a central element in the course and that students are expected to engage actively in dialogue through a series of discussion forums. They also clearly specify the expectations for AODs in terms of the posting of contributions and replies and guidelines for length and content. Students are also directed to examine the AOD rubric and ask the instructor any questions about participation criteria and evaluation before getting started. An introductory Zoom session held early in the first week of the course allows the instructor to reinforce AOD expectations and "rules."

Discussion forums are assigned weekly to lessons that center on individual student learning. Those lessons constitute over half of the course schedule. AODs are as asynchronous as possible, allowing students to work on them at their convenience as long as they meet two established weekly deadlines. Following Black (2005), staggered deadlines are employed.

Students are assigned to read a lesson prior to their participation in the discussion forum. When they enter the forum, they are presented with three discussion

prompts and instructed to post an initial contribution on one of the three prompts. The choice of prompt is theirs. Students are instructed that their contributions and subsequent replies should be succinct yet comprehensive. As a general guideline, we would suggest that they be from 150-250 words in length, but they should not exceed 300 words without the prior permission of the instructor. That encourages students to make a balanced contribution that is simultaneously comprehensive and concise. Additionally, it limits clutter in the forum and facilitates students' reading of all the contributions that have been posted. The deadline for students to read the lesson and make their initial AOD post is mid-week.

Students then have the remainder of the week to craft three separate replies—one on each of the three discussion threads. To maximize value, students are instructed to wait until after the deadline for initial posts to select the most appropriate ones for their reply. Replies should state what they learned from their classmate's initial post, indicate why they found that post valuable or interesting, or suggest advice to a classmate who is confronting a challenge at their organization. In short, students are given maximum flexibility to make contributions that add value to the discussion. Additional replies they make might be reflected in their total score, as described below.

Swan and Shih (2005) study graduate students and find that instructor presence has a higher impact than the perceived social presence of peers. Arbaugh (2000) supports the finding that instructor interaction is positively associated with graduate student satisfaction. We concur that instructor engagement is essential, and we have found that to be most effective, instructors should check into AOD at least daily. That provides them the opportunity to provide feedback and make comments to encourage participation. It also provides an opportunity to provide timely correction of misinformation or confusing posts. We also use emojis in addition to text—or sometimes without accompanying text—to provide feedback, which Padgett et al. (2021) find to increase students' perceptions of both feedback and instructor social presence. Our conclusion is that students are more likely to give their best effort when they are aware that instructors are actively monitoring their forum discussions on a regular basis.

Students are aware that their contributions will be evaluated according to the Discussion Forum Evaluation Rubric that is presented in Table A.3 (Appendix A). Requiring students to participate on all the discussion threads ensures that they have considered the central concepts of the lesson which drive the prompts to begin with. Students will be rewarded for the quality and value they provide to the discussion, as well as the insights they offer through participating. We emphasize to students that the criteria are weighted equally, meaning that their reply posts are as important as their initial contribution posts. Value can be provided by students' use of examples from their own organizational experience, presentation of alternative perspectives, providing links to appropriate supporting or enriching material, and other contributions that exceed expectations. In a manner like the undergraduate course described above, weighting the Professionalism and Value criterion heavily provides the incentive for students to give their best professional effort. Additionally, the rubric presents what is required to earn points on each criterion. "Executive" level performance requires students to provide tremendous value and insights that enhance

the collective learning experience and to demonstrate thought leadership. Thus, professional outcomes are amplified through AOD performance.

Finally, at the conclusion of each discussion forum, the instructor enters evaluative scores as soon as possible—always no later than the next day—and posts a detailed announcement to the entire class. Timely objective feedback and transparency are paramount, and to that end the overall mean score for the forum is posted along with a series of summary “takeaways” tailored to reinforce desired outcomes. After the first two AODs of a course, the names of students who have achieved perfect scores are also posted to serve as examples for students who desire to achieve high scores themselves. They are encouraged to go back and review what the top-scorers have contributed and how the instructor responded to them; in effect, that provides a model for their own future work. Harnessing peer comparison is a common theme between our undergraduate and graduate applications.

To examine student perceptions of the extent to which AOD provided a positive educational experience and contributed to their learning, we conducted a voluntary survey of our students during a recent semester. This survey is the pedagogical heart of our study, and it was initiated to test whether our approach was achieving the desired outcomes from the perspective of our students. Our survey measured students’ perceptions of the AOD format across multiple pedagogical goals—including connection to course content, classmates, and the instructor; enhancing interest in course concepts; and receiving valuable feedback (Robertson et al., 2021). The survey outcomes are presented in the next section.

Results

Our survey questions, which are presented in Appendix B, were designed to measure students’ self-reported perceptions about whether AOD enhanced their learning of course material (Question 1 & 4), enabled engagement with classmates (Question 2) and their instructor (Question 3), helped them develop their professional expertise (Question 5), helped them to form learning communities (Question 6), and whether rubrics established clear expectations and feedback while motivating them to deliver their best effort (Questions 7, 8, & 9). The survey also measured whether AOD affected students’ overall satisfaction with the course (Question 10), helped them to achieve course objectives (Question 11), and contributed to the value of the course (Question 12).

Student participation in this survey was both voluntary and anonymous. We emphasized that no course grades were connected to their participation in the survey or to any responses. We provided them with a link to a Qualtrics survey created for our survey and asked them to participate through an announcement posted in the classroom and through two follow-up email reminders. The results of our survey are summarized in Table 1 (see p. 49).

Our survey results reinforce prior findings that AOD helps to create valuable engagement with peers and the perception of joining a learning community (see results from Question 2 and 6 in Table 1). With respect to engagement with the instructor, our results reflect the differing degrees of instructor engagement previously discussed. The responses to Question 3 reveal that 88.9% of graduate students surveyed found that

Table 1*Descriptive Statistics for AOD Self-Reported Survey Responses*

	Undergraduate Students			Graduate Students		
	<i>N</i>	Number of affirmative responses	Percentage of affirmative responses	<i>N</i>	Number of affirmative responses	Percentage of affirmative responses
Question 1: Enhanced understanding of course material	47*	40	85.1%	63**	55	87.3%
Question 2: Engagement with classmates	47	37	78.7%	63	57	90.5%
Question 3: Engagement with instructor	47	18	38.3%	63	56	88.9%
Question 4: Motivation to learn more	47	37	78.7%	63	48	76.2%
Question 5: Practice professional communication	47	40	85.1%	63	55	87.3%
Question 6: Learning community participation	47	36	76.6%	63	54	85.7%
Question 7: Rubric establishes expectations	47	43	91.5%	63	51	81.0%
Question 8: Rubric provides useful feedback	47	43	91.5%	63	47	74.6%
Question 9: Rubric motivates professional effort	47	43	91.5%	63	53	84.1%
Question 10: AOD increases course satisfaction	47	32	68.1%	63	46	73.0%
Question 11: AOD achieves stated course objectives	47	35	74.5%	62	51	82.3%
Question 12: AOD enhances course value	47	34	72.3%	63	52	82.5%

* Undergraduate response rate is 40.8%.

** Graduate response rate is 54.4%.

this AOD model enabled engagement with their instructor while only 38.3% of the undergrad class felt the same way. This makes sense because in our graduate application, the instructor is actively engaging with students *during* the forums, while in our undergraduate application, the instructor engagement comes *after* the forum has concluded. The graduate instructor has an express goal to be a guide through the discussion with almost daily interactions. Alternatively, the undergraduate instructor's goal is to be a "guide on the side" in which interactions come after the forum has concluded and in a collective format (i.e., class announcement videos) as well as direct comments to individual students. This approach has been chosen in our undergraduate application because the students receive many timely comments from the instructor on experiential projects that coincide with the discussion forum topics. Additionally, the instructor uses direct responses to individual students to enhance the personal touch of the class. It is possible that students linked survey Question 3 with instructor comments during the forum, rather than thinking holistically about their net feedback received on topics. The differing responses to Question 3 make sense given these differing goals.

AOD [asynchronous online discussion] helps to create valuable engagement with peers and the perception of joining a learning community.

Also reinforcing prior literature, our survey finds that our AOD approach was a useful pedagogical tool. Responses to Questions 1 and 4 present a high percentage of survey respondents who find that AOD enhances understanding of course content and motivates them to learn more. From the instructor's perspective, Questions 10, 11, and 12 provide added incentive to consider adding AOD to course design. Students reported that AOD enhanced their satisfaction with the overall course, helped achieve stated course objectives, and ultimately contributed to the value of the course. The strong responses to Question 12 are especially important because most online learners are balancing professional life, home life, and other courses, yet they still recognize the value of this additional use of their scarce time. Additionally, we find that graduate students reported higher levels of satisfaction and found AODs to be more valuable than did undergraduate students, reflecting previous research results reported by Olliges (2017). Another reason for lower scores in the undergraduate class could be the heavy workload which divides students' time allocated to academic life.

One of our primary research interests is to develop an AOD approach that nurtures students to develop their professional communication skills. The results from Question 5 reveal that this goal has been accomplished. By clearly communicating instructor expectations, through our rubrics and direct communications, students understand what the instructor deems to be a "professional" standard of communication. Although they are related, the rubric used for graduate students (see Table A.3 in Appendix A) is more advanced than the rubric used for undergraduate students (see Table A.2 in Appendix A). Our findings underscore that AOD can be structured to nurture professional outcomes.

Our other primary research objective is to illustrate the use of rubrics to communicate instructor expectations. Questions 7 and 8 demonstrate that our rubrics communicate expectations to students, and they also enable critical feedback on performance. From the instructor's perspective, using a rubric removes some of the subjectivity from grading. While some subjectivity remains in assigning a category of

“executive” or “professional”, students can clearly see the criteria under evaluation in each category. Using a rubric removes ambiguity for students regarding the grading standard for any assignment, and our results reinforce that point. Question 9 is a critical result for our survey. Responses to this question clearly indicate two points: (1) our rubric motivated student action; and (2) the action nurtured was the student’s best professional effort.

Conclusion

Our research supports previous studies finding that students who are enrolled in online courses report elevated levels of satisfaction when presented with engaging learning opportunities (e.g., Olliges, 2017). Accordingly, AODs represent a viable alternative or complement to other less dynamic pedagogical techniques in a remote learning environment. The results of our survey contribute three key findings. First, our approach to the design and management of AOD succeeds in encouraging students to achieve professional outcomes through engagement in interactive discussions within an online forum environment in which they are expected to think critically and contribute to a shared learning experience. Second, our rubrics are key tools that direct student attention to those outcomes, communicate our expectations for their performance, and provide feedback for students so that they can improve on those outcomes. Third, our study demonstrates that students recognize how AOD enhances the value of their courses. This pedagogical technique enables instructors to place more responsibility for learning on students who develop an effective learning community as they interact with their peers under the guidance of their instructors.

Our study revealed some distinct differences between undergraduate and graduate student perceptions that deserve further examination. To address that shortcoming, a potential future expansion or extension of our study could explore ways to further refine the AOD teaching-learning process by considering ways to incorporate more and richer instructor engagement in undergraduate AOD forums while not discouraging student contributions. Undergraduate students generally lack the maturity and experience of graduate students, who in our experience respond more positively to instructor comments and suggestions when challenged. A qualitative survey to explore that question might be fruitful and provide actionable insights for the design and management of even more effective AODs. A better understanding of students’ previous experience participating in AODs would also shed light on how they perceive the value of AODs. That information could be obtained easily by adding a question to a survey such as ours.

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Appendices

Appendix A: Rubrics

Table A.1

Initial Undergraduate Rubric

Criteria	Excellent	Good	Average	Poor
Number of postings	4-5 postings (4-5 pts)	3 postings (3 pts)	2 postings (2 pts)	1 or fewer postings (0-1 pts)
Two postings by Thursday	2 postings by 9:00PM Thursday (2 pts)	1 posting by 9:00PM Thursday (1 pt)		0 postings by 9:00PM Thursday (0 pts)
At least 1 post contains a linked article	At least one post contains a linked article (1 pt)			No linked articles in any post (0 pts)
Post distribution throughout the week	Posts made on three different days (2 pts)	Posts made on two different days (1 pt)		All posts made on one day (0 pts)

Table A.2

Revised and Currently Deployed Undergraduate Rubric

Criteria	Excellent	Good	Average	Poor
Number of meaningful posts	4 posts (4 pts)	3 posts (3 pts)	2 posts (2 pts)	1 or fewer posts (0-1 pts)
Posts distributed throughout the week (not all on one day)	Posts made on three different days (2 pts) <i>NOTE: this means you must start by Friday at midnight</i>	Posts made on two different days (1 pts)		All posts made on one day (0 pts)
Professionalism Score	The Executive: Provided <i>tremendous value and critical insights</i> that enhanced the collective learning experience; posts were carefully crafted and presented in a style easy for	The Professional: Provided <i>measurable value</i> to the class learning experience; well-written; concise and clear; nothing hampered comprehension of posts. Reinforced your points with high-level sources	The Intern: Provided <i>insufficient value</i> to the class learning experience. (2 pts)	Fired: Provided <i>little or no meaningful value</i> to the class learning experience. (0 pts)

Table A.2 Cont.

Criteria	Excellent	Good	Average	Poor
	others to read and understand. Demonstrated <i>thought leadership</i> . Reinforced your points with high-level sources (linked articles). (4 pts)	(linked articles). (3 pts)		

Table A.3

Graduate Rubric

	4 – Excellent	3 – Good (the acceptable “standard” for MBA-level work)	2 – Fair/Needs Work	1 – Poor	0 – Unacceptable
Quality of Initial Post	Post was direct and exceptionally thorough; informative, relevant, on-topic; insightful, thoughtful, logical; provided clear evidence of mastery of course content and application; demonstrated critical thinking. An exemplary contribution.	Post was direct, thorough, and relevant. Demonstrated thought and logic. Ideas or arguments showed evidence of course knowledge and application. A solid contribution.	Post was indirect, relevance was off-topic, and/or logic was ineffective. Demonstrated superficial evidence of knowledge and understanding of content and application. A contribution that did not meet expectations for a graduate course.	Post failed to answer the question; irrelevant or illogical; demonstrated little or no understanding of course content or its application.	No post made by the deadline.
Quality of Reply Post 1	Reply was insightful, relevant, logical, and on-topic. Demonstrated the potential to extend the discussion.	Reply was thorough and contributed to the discussion.	Reply demonstrated insufficient level of reflection or thinking expected from a graduate student.	Reply failed to demonstrate reflection or thinking.	No post made by the deadline.
Quality of Reply Post 2	Reply was insightful, relevant, logical, and	Reply was thorough and contributed to the discussion.	Reply demonstrated insufficient level of	Reply failed to demonstrate reflection or thinking.	No post made by the deadline.

Table A.3 Cont.

	on-topic. Demonstrated the potential to extend the discussion.		reflection or thinking expected from a graduate student.		
Quality of Reply Post 3	Reply was insightful, relevant, logical, and on-topic. Demonstrated the potential to extend the discussion.	Reply was thorough and contributed to the discussion.	Reply demonstrated insufficient level of reflection or thinking expected from a graduate student.	Reply failed to demonstrate reflection or thinking.	No post made by the deadline.
Professionalism and Value of Posts to the Collective Learning Experience	Provided <i>tremendous value and critical insights</i> that enhanced the collective learning experience; posts were carefully crafted and presented in a style easy for others to read and understand. Demonstrated <i>thought leadership</i> . "Executive"	Provided <i>measurable value</i> to the class learning experience; well-written; concise and clear; nothing hampered comprehension of posts. "Professional"	Provided <i>insufficient value</i> to the class learning experience; perhaps a post missed the deadline. "Intern"	Provided <i>no meaningful value</i> to the class learning experience; perhaps multiple posts missed the deadline. "Fired"	No post made by the deadline. "Unemployed"

Appendix B: Survey Questions

All questions use the same four distractors: (1) Strongly Agree; (2) Somewhat Agree; (3) Somewhat disagree; and (4) Strongly Disagree. We actively chose to note include a fifth distractor for a neutral comment to force students to choose a side. We treat the combination of "strongly agree" and "somewhat agree" as an "affirmative response". Our survey response rate was slightly over 50%.

- *Question 1:* The discussions, in my online class, enable me to enhance my understanding of course material.
- *Question 2:* The discussions, in my online class, enable me to engage with my classmates (i.e., peers).
- *Question 3:* The discussions, in my online class, enable me to engage with the course instructor.
- *Question 4:* The discussions, in my online class, motivated me to learn more about course concepts.

- *Question 5:* The discussions, in my online class, helped me practice professional communication in a safe environment.
- *Question 6:* The discussions, in my online class, enabled me to become part of a learning community.
- *Question 7:* The evaluation rubric clearly established the instructor's expectations and grading standards.
- *Question 8:* The completed evaluation rubric provided useful feedback about my performance.
- *Question 9:* The evaluation rubric motivated me to deliver my best professional effort.
- *Question 10:* The discussions increased my overall satisfaction with the course.
- *Question 11:* The discussions helped to achieve stated course objectives.
- *Question 12:* The discussions contributed to the value of the course.

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