

# Design and Facilitation Strategies Used in Asynchronous Online Discussions

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## ABSTRACT

This study employed interviews and document analysis to achieve a better understanding of the design and facilitation strategies used by online instructors in a department of educational technology at a large university in the U.S. Some distinctions were found with the literature about what strategies and activities can be used in online asynchronous discussions. Some of the suggestions such as facilitating online collaborative teams, considering self-regulation strategies, creating a discussion rubric that evaluate cognitive, teaching, and social presence, having optimal level of instructor presence in the discussion forum, and setting specified time parameters still need consideration, as they were not implemented in some of courses examined in this study. These areas may be studied more to generate better understanding of their effects on student participation and to provide clear suggestions to online instructors on their use.

**Keywords:** *Asynchronous discussions; design and facilitation guidelines; discussion forums; distance education; online learning.*

## INTRODUCTION

The Distance Education Enrollment Report of 2017 found that in 2017 29.7 percent of students, a total of 6,022,105 students, now take at least one distance education course. In addition, more recently it is reported that public institutions serve the largest portion of online students, with 67.8 percent of all distance students. These data affirm that online learning has been adopted in education with trends indicating continued growth.

In a face-to-face classroom environment, most interactions, both student-student and student-instructor, happen in the classroom. However, in an online environment, this type of interaction is generally not available, challenging designers to provide more interactive online learning experiences. Asynchronous online discussions are often used to promote interaction and critical thinking in online courses (Bowden, 2012). Still, low level of participation (e.g., Kim, 2013) and lack of interaction (e.g., Tsiotakis & Jimoyiannis, 2016) are found to be some of the challenges instructors have faced in online learning environments. In this regard, several studies have documented that instructional design and facilitation approaches affect student participation and interaction in different ways (Dennen, 2005; Hewitt, 2003; Palloff & Pratt, 2013; Rovai, 2007). However, as reported in Baldwin, Ching, and Hsu (2017) study, there is not a clear set of best practices for online courses in the literature. They identified six national and statewide online course evaluation instruments and examined the characteristics. The study identified a set of essential standards in all six evaluation instruments. These standards are:

- Objectives are available.
- Navigation is intuitive.
- Technology is used to promote learner engagement/ facilitate learning.

- Student-to-student interaction is supported.
- Communication and activities are used to build community.
- Instructor contact information is stated.
- Expectations regarding quality of communication/ participation are provided.
- Assessment rubrics for graded assignments are provided.
- Assessments align with objectives.
- Links to institutional services are provided.
- Course has accommodations for disabilities.
- Course policies are stated for behavior expectations.

While there are all of those design and facilitation guidelines out there, the aim of this present study was to understand how online instructors are using those guidelines. Particularly, the purpose of this study is not offering a new knowledge in the sense of providing guidelines but to better understand what online instructors are already doing. Therefore, the online education research may rethink their guidelines or what a teacher might need.

In this regard, the purpose of this study was to identify emergent assertions regarding design and facilitation strategies that are used by online higher education instructors. Since instructional design and facilitation approaches affect student participation and interaction in different ways (Dennen, 2005; Palloff & Pratt, 2007; Rovai, 2007), central to this case study was to identify how online instructors in higher education who teach fully online courses provide design and facilitation strategies. Guidelines put forward in the literature are used to examine design and facilitation strategies that four instructors used to implement asynchronous discussions while teaching online.

Thus, in this study, instructors' own words and their designed courses are used to gain insight into their lived instructional experiences. The following research questions addressed in this study are as follows:

- Which kinds of design and facilitation strategies do online instructors use for their asynchronous discussions?
- To what extent is online instructors' practice consistent with the design and facilitation guidelines for asynchronous discussions put forward in the literature?

## REVIEW OF LITERATURE

A literature review established potential design and facilitation factors that may influence student participation in online environments. From this literature, design and facilitation activities were identified.

### Design Activities

#### Relevant and Goal-Based Activities

Dennen (2005) concluded that neither a discussion assignment that was goal based but not necessarily relevant nor an activity that was relevant but not clearly goal based achieved participation of a level and quality comparable to activities that met both criteria. Dennen's findings in this regard overlap with those of other studies and consistent with the essential standards in six online course evaluation instruments in Baldwin, Ching, and Hsu' (2017) study (Blackboard's Exemplary Course Program Rubric, 2012; California Community Colleges' Online Education Initiative (OEI) Course Design Rubric, 2016; The Open SUNY Course Quality Review Rubric (OSCQR), 2016; Quality Matters (QM) Higher Education Rubric, 2014; Illinois Online Network's Quality Online Course Initiative (QOCI), 2015; California State University Quality Online Learning and Teaching (QOLT), 2015). These six course evaluation instruments mainly focus on the alignment of learning objectives and the other activities in the course (Baldwin, Ching, & Hsu, 2017). The two statements "objectives are available" and "assessments align with objectives" were found to be present in all of these six course evaluation instruments (Baldwin, Ching, & Hsu, 2017). For instance, Blackboard Exemplary Course Rubric checks that "goals and objectives are easily located within the course" (Blackboard) and the Open SUNY Course Quality Review Rubric checks that "course objectives/outcomes are clearly defined,

measurable, and aligned to student learning activities and assessments” (OSQCR).

### **Explicit Guidelines and Expectations**

Baldwin, Ching, and Hsu (2017) found the six online course evaluation instruments share the following two standards: “Expectations regarding quality of communication/ participation are provided” and “Assessment rubrics for graded assignments are provided” (p. 56). Similarly, several studies examined online discussions and recommended clearly defining communication or participation requirements in the course syllabus or providing a rubric (Hsiao, Chen, & Hu, 2013; Pawan, Paulus, Yalcin, & Chang, 2003; Rovai, 2007). According to Pawan et al. (2003), “the participation requirements could include deadlines for initial posts, required responses to others by certain dates, modeling, and description of the length contributions to the discussion” (p. 136). Gilbert and Dabbagh (2005), who analyzed twelve online courses in order to study the impact of protocol structuredness on meaningful discourse, suggested using clearly defined rubrics for discussion posts, which encourage students to engage meaningfully rather than merely refer to course readings.

In the literature, one of the most important factors that promote interaction and critical thinking in online discussions is establishing clear guidelines and expectations, which is also closely related to the first factor of designing relevant and goal based activities. For example, in Dennen’s (2005) study, setting explicit expectations greatly impacted student participation. When instructor expectations were not clear, student participation floundered because students did not know how much they should participate or what their posts should look like. The studies also showed that courses with clearly designed discussion activities had a higher quantity and quality of participation (Dennen, 2005; Hsiao, Chen, & Hu, 2013; Pena & Almaguer, 2012).

### **Consistent and Uncluttered Layout**

As found in the six course evaluation instruments, consistency is an important value in online courses (Baldwin, Ching, & Hsu, 2017). Since students did not want to spend their time searching for administrative information like due dates or assignment descriptions, researchers and evaluation instruments suggest that online instructors should be consistent in how they organize information to the class (Baldwin, Ching, & Hsu, 2017; Jaggars & Xu, 2016). Similarly, Swan’s (2002) study, which investigated correlations between 22 course design factors and student perceptions of satisfaction, learning, and interaction with instructors and classmates, found that three factors were significantly related to student perceptions—clarity and consistency in course design, contact with and feedback from course instructors, and active and valued discussion.

### **Promoting Critical Thinking**

While discussion activities are among the most commonly used techniques in the online classroom, using the right discussion methods is crucial to promote active learning and meaningful interactions. According to Wang and Chen (2008), many students’ postings do not reflect critical thinking, but merely summarize course readings or exchange personal experiences. To overcome this issue, “posting requirements should encourage students to develop their thought processes beyond citing the course readings in order to meaningfully engage online discourse” (Gilbert & Dabbagh, 2005). Initial prompts or questioning is a significant instructional design element for the promotion of effective discussion. To facilitate online discussions well, asking the kind of questions that encourage students to create critical dialogue is crucial (Bradley, Thom, Hayes, & Hay, 2008; Muilenburg & Berge, 2000; Palloff & Pratt, 2007). According to Bradley et al. (2008) and Muilenburg & Berge (2000), types of questions would differ according to instructional goals and objectives, but they should have the common aim of involving students in meaningful interactions. In this regard, Maurino, Federman, F., & Greenwald (2007) suggested arranging role-playing or debates on issues and topics relevant to the course, instead of only having students respond to articles or research papers. Additionally, several research found that structured asynchronous discussions are more effective for promoting critical thinking (Baran & Correira, 2009; deNoyelles, Zydney, & Chen, 2014; Scanlan & Hancock, 2010; Zydney, deNoyelles, Seo, 2012).

## Facilitation Activities

### Instructor Presence, Facilitation, Modeling, and Feedback

Researchers agree that interaction between instructor and students is an essential part of an online course (Moore & Marra, 2005; Palloff & Pratt, 2007; Steinman, 2007; Swan, 2002), and the facilitator's role is a significant factor for meaningful interaction in an online environment (Baran, Correia, and Thompson, 2011; Dennen, 2005; Maurino et al., 2007; Nagel, Blignaut, & Cronjé, 2009; Spatariu, Quinn, & Hartley, 2007; Palloff & Pratt, 2007). In addition, the six online evaluation instruments happen to have a common standard that is building a sense of community with communication activities. To support such interaction, an instructor needs to develop and maintain a social presence in the online environment (Garrison, Anderson, & Archer, 2007; Palloff & Pratt, 2007). To make this presence known and enhance engagement, the instructor can use several features of online learning environments, such as announcements on the homepage of the course delivery system, e-mails to students, discussion forums, and synchronous communication. An effective way to make this presence known is for the instructor to participate in online discussions.

Discussion participation does not occur on its own; "learners look to the instructor to shape their interactions" (Dennen, 2005, p. 128), and discussion is more effective when learners participate takes place by the in conjunction with the instructor. However, it can be a challenge for the online instructor "to show that student postings are read without the instructor becoming the center of all discussions" (Rovai, 2007, p. 82). To meet this challenge, Rovai suggests the following behaviors to promote social presence: checking the discussion forums each day, in order to show that student postings are being read, post at least one message per day on group discussion boards, periodically summarize what has been or needs to be done, encourage student dialog by asking thought-provoking questions, reply immediately after receiving an e-mail.

Similar to Rovai (2007), Mazzolini and Maddison (2007) also found that, according to students, an online instructor should ask follow-up questions while answering one, introduce new concepts or new ways of thinking about solutions, answer questions as soon as possible, provide feedback, and discuss student solutions from different perspectives. Even though instructor participation in a discussion forum is suggested by some researchers such as Dennen (2005), Maurino et al. (2007), Mazzolini and Maddison's (2007) and Nagel et al.'s (2009), when instructors dominate the discussion, they shut down the potential for more conversation among students (Dennen, 2001, 2005; Mazzolini & Maddison (2007). Nandi, Hamilton, and Harland (2012) found that rather than a fully student-centered or instructor-centered discussion, a combination of both approaches is more advantageous. Dennen (2005) suggested that an effective way for the instructor to promote peer interaction while being involved in discussions is simply to let students know that their messages are being read.

## METHOD

This study implemented a qualitative research approach (Creswell, 1998), more specifically, a multicase study design (Merriam, 2009), which involves collecting and analyzing data from four unique cases. In this multi-case study, each instructor's design and facilitation strategies used to implement asynchronous discussions are recognized as a unique case that can be described in detail. Thus, multi-case study approach was adopted, as each course was different from the others and instructors had their own way of designing strategies to facilitate discussion.

### Participants

The participants for this study were four higher education instructors who teach fully online courses and use asynchronous discussions. Ideal participants were identified in two ways: first peers and colleagues were asked for referrals, second criterion-based sampling involved selecting participants that met predetermined criteria of importance (Patton, 1990), which were: (a) having taught at least one distance education course via the Internet, and (b) having used asynchronous online discussion forums in any of their online courses, and (c) representing the range of potential participants in the setting. The participants were

four online instructors in the department of educational technology at a large university in the U.S, where distance education had been in place for over ten years and currently offers 116 online programs (47 undergrad and 69 graduate level) with over 5000 students enrolled. Table 1 summarizes the demographics of the participants, and pseudonyms are used.

**Table 1. Instructors and courses examined for this study**

Instructor	Title	Course Topic	Course Level	Class Size
Dr. Gabbert	Associate professor	Technology and Critical Thinking	Graduate	20-25
Dr. Wayne	Adjunct faculty member	Instructional Technology	Graduate	8-17
Dr. Cannie	Assistant professor	Needs Analysis and Assessment	Graduate	10-12
Dr. Gary	Assistant professor	Computers in Education	Upper-level undergraduate	10-12

**Data Collection and Analysis**

Data were collected through semi-structured interviews as well as artifact analysis of documents for each course. The participants were asked to select one of their best online courses and answer the interview questions based on that course. The purpose of the semi-structured interviews was to learn about the instructors’ experiences teaching online and their perceptions on using design and facilitation strategies for asynchronous discussion. The interviews were recorded and fully transcribed for analysis, following with another researcher checked each transcript for accuracy. Each interview took about an hour, and several questions referring to the instructors’ online teaching experiences were asked.

Course related documents were requested in the follow-up email after the recruitment email, and all participants provided the documents at the end of the interviews. The purpose of the document review was to get more information relating to the design and facilitation strategies instructors talked about during the interviews. The documents included one of their best online course syllabi, assignment descriptions, examples of discussion prompts, course guidelines, and in one case, numerical log of discussion participation for a class.

Data analysis started with reading and rereading all transcriptions of recorded interviews and course documents. Interviews and artifacts were analyzed by coding topical themes that aligned with a priori categories, drawn from the literature: (1) relevant and goal- based activities, (2) explicit guidelines and expectations, (3) consistent and uncluttered layout, (4) promoting critical thinking, and (5) instructor presence, facilitation modeling and feedback. After the topical themes were coded, data were then analyzed across cases. By going back to interview data and collected documents, several assertions were generated that capture the experiences of participants (Erickson, 1986). The trustworthiness of the assertions was checked by seeking disconfirming as well as confirming evidence in the data. In several instances, and especially early in the analysis, some assertions were abandoned because others had better linkages across a variety of data sources or cases.

Qualitative researchers seek to develop trustworthiness, which is considered as the primary criterion for establishing the validity (Lincoln & Guba, 1985). In this study, several approaches were used to establish trustworthiness. Triangulation techniques (Lincoln & Guba, 1985) were implemented by collecting data using multiple and diverse methods (including documents analysis and interviews). The findings were not the result of a one-dimensional investigation, but rather emerged from a variety of ways to collect information. In addition, in a qualitative analysis, the researcher brings his or her own experiences into the analysis process, which runs the risk of bias if the analysis is completed by only one researcher. In order to minimize this limitation and mitigate the bias in the analysis process, another researcher experienced in distance education

provided peer debriefing during the whole analysis process.

**FINDINGS & DISCUSSION**

Each course in this study had its own unique design and facilitation strategies for asynchronous discussions. The basic details of each instructor’s course discussion activities are summarized in Table 2.

**Table 2. Topical themes for the category of relevant and goal- based activities**

Instructor	Expectations	Feedback	Grades
Dr. Gabbert	Ongoing participation expected, overall expectations listed on the rubric with examples	Every week students received a score and feedback for the quality of their participation	Certain number of the postings graded (randomly selected). Didn’t want the postings to be too heavily weighted on the final grade.
Dr. Wayne	Students asked questions about the readings to the class and posted summaries of the salient points rather than answering instructor’s questions.	Each week, the instructor read the initial posts and answered questions on the discussion forum.	Asynchronous discussions equal to two assignments so were a substantial part of final grade. Quantity of postings graded.
Dr. Cannie	Synchronous discussions were used in addition to asynchronous. Students were expected to pose questions in the discussion forum rather than answering instructor’s questions.	Every week they received a score and feedback for the quality of their participation. Modeling was an important part of instruction.	Synchronous discussions were voluntary but asynchronous discussions were graded based on quantity.
Mr. Gary	Ongoing participation expected. Required to post at least 200 words for initial postings.	Provided feedback and graded each week.	20% of the grade was for online participation. Initial posts were required and graded. Additional participation by responding to another person were also graded but not for the content.

*Assertion 1: Building the course foundation: Course outline, syllabus, and outcomes influences the discussion board activities in the class.*

“Building the course foundation: Course outline, syllabus, and outcomes influences the discussion board activities in the class” assertion’s themes and codes are described in Table 3.

**Table 3. Themes and Codes of the Assertion 1**

Theme 1: Alignment of objectives	Theme 2: Relevance to student lives	Theme 3: Alignment to readings
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Code 1	Objectives are available	Course content is relevant to student lives	Discussions are aligned with readings
Code 2	Learning activities are aligned with objectives	Projects are related to student lives	Readings are aligned with each other (week to week)
Code 3	Assesments are aligned with objectives	Discussion activities are relevant and accurate to student participation	-
Code 4	Outcomes are aligned with objectives	-	-

The alignment of learning objectives and the other activities in the course was found to be one of the essential standards in online course design. This assertion was reflected in instructors' efforts to design course activities to be relevant and goal-based. The data revealed that, when the instructors designed their courses, they were aware of the importance of objectives, outcomes, and relevance. However, their course documents and syllabuses showed differences and it is found that each instructor have their own way of providing objectives. While one of the instructors in this study had separate objectives for each week, three of them only had a set of objectives for the whole course. It is found that while the syllabuses often consist of a broad class schedule with the required readings for the whole semester, weekly or bi-weekly modules presented with subsections and provided specifics about objectives, readings, learning activities, discussion forum posting requirements and so on. It is also found that while three of these instructors had detailed objectives with subcategories in their syllabus, one of them shared short and concise objectives; for instance, two main objectives for whole course. The instructors described the importance of "relevance and accuracy" to student participation in asynchronous discussions. For example, Mr. Gary

"The relevance and accuracy [on student participation] is very very important. Based on the student evaluations, it is important that as many as teachers should actually take that seriously. It is very easy to just say 'ok curriculum has been designed, I don't have to do anything more'..."

Relevance to students' lives is an important part in their participation, this study also found that the instructors used discussion prompts to encourage "them [students] to bring their work experience and real life experience as much as possible" (Mr. Gary). However, the data underlines that instructors consider the other course activities, such as projects, to be more relevant to the overall course design than asynchronous discussions.

In all of the courses examined for this study, some discussion activities were based on the required reading and the required readings usually had been chosen in advance before the class has started. For instance, Drs. Cannie and Wayne required the students to post one question for each reading, and Dr. Gabbert and Mr. Gary asked questions related to the readings. In addition, the instructors posted some additional readings when needed, such as to explain a certain point in the discussion forum. The following quotation from the interview with Dr. Gabbert highlights the activities that are relevant and goal based.

"I tried to build connections with last week like 'we talked about this, now we are gonna be talking about this and this is why these two things are sequential in my mind.' I would try to bridge the previous week's readings in this week's readings" (Dr. Gabbert, #227-229).

Lastly, all the instructors in the study reported that their online students came to class with an expectation of the online class should be easier than a face-to-face class. As Dr. Gabbert voiced the students think like “I do my readings and I do my assignments and I submit them and you leave me alone.” But she does not think “they’d be expecting a class in which they were being asked to participate regularly you know three times throughout the week.” The instructors in this study reported that students who came with these expectations often feel disappointed and their grade and their interaction in the class reflected that as well.

*Assertion 2: Explicit guidelines and expectations, structured discussion prompts, and scaffolding are major influences on student interaction and critical thinking.*

“Explicit guidelines and expectations, structured discussion prompts, and scaffolding are major influences on student interaction and critical thinking” assertion’s themes and codes are described in Table 4.

**Table 4. Themes and Codes of the Assertion 2**

	<b>Theme 1: Discussion posts’ expectations</b>	<b>Theme 2: Time related activities about the discussion posts</b>
Code 1	Rubrics about the expectations of discussion posts	Providing time paramaters
Code 2	Grading the discussion postings	Using multiple deadline approach
Code 3	Clear expectations about the discussions	-
Code 4	Duplicating the expectations in different places of the course	-

One of the most effective strategies to communicate expectations for asynchronous discussions is providing a rubric. Discussion rubric can be used as a guide because it gives formative feedback to students and supports student self-evaluation before posting to the discussion board (Hsiao, Chen, & Hu, 2013; Maddix, 2012; Rovai, 2007). Based on both interviews and document analysis, the analysis showed that some of the instructors in this study did not provide rubrics about the expectations of the discussion postings. It is found that the instructors were aware of the importance of the rubrics but they said they plan to use the rubrics in their next online classes. The instructors without a rubric graded the discussions based on the number of threads, for instance, if a student posted 3 times than he get the full point for that week. Thus, they did not check the quality of the postings. For example, Dr. Wayne plans to have “a rubric that talks about what is good or not good.” So she would check if “you [the students] asked questions. In their response post did you [they] share something meaningful or an extra resources or was it just more like “woo you know this is a great summary, thank you.””

Two of the instructors in this study provided their discussion posting expectations at the beginning of the semester with detailed rubrics, and descriptions of excellent to poor postings also appeared in their syllabi. They reminded students of these throughout the semester and gave further examples in weekly modules, a practice recommended by Hew and Cheung (2012). Dr. Gary and Gabbert used detailed rubrics for discussion forums because they believe “students will participate if the expectations are clear...” These



two instructors believe that providing the guidelines and expectations in one place, it is usually their syllabi, would not be enough for an online course so they clarified them within the discussion forum, weekly modules, or announcements. For instance, Mr. Gary found that duplicating the expectations in different places throughout the course was important “because students read remarkably little of the syllabus.”

According to researchers, implementing multiple deadlines and specifying different types of required messages or interactions each time is essential to support student interaction (Dennen, 2001; Gilbert & Dabbagh, 2005). However, not all the instructors interviewed in this study specified time parameters. Dr. Gabbert, who did implement multiple deadlines in her class, explained, “I would ask the questions and say they had to post a minimum of three times and distribute their postings throughout the week. So they couldn’t just go in on Tuesday and write a bunch of postings and then never.” Dr. Cannie and Mr. Gary also used multiple deadlines. On the other hand, Dr. Wayne had only one deadline per week, but she accepted late posts. She revealed, “...I have to be honest. I said they had to post by Thursday, their initial post. But I counted everything...” Thus, even though the multiple deadline approach was recommended in the literature, it was not implemented by all of the instructors. Although many online students need flexibility because of full-time jobs, multiple deadlines encourage students to spend time on tasks, avoid procrastination, and promote dialogue because there is time for people to answer each other (Tobin, 2004).

In order to increase the quality of discourse and critical thinking in asynchronous online discussions, providing scaffolding is an important step (Schindler & Burkholder, 2014). One of the effective ways to provide scaffolding in asynchronous online discussions is to communicate students with exemplars of acceptable discussion postings (Schindler & Burkholder, 2014). In the present study, one of the instructors provided students with examples of acceptable postings and substantive responses. She reported that these examples reduced cognitive load and allowed students to focus on course content because they did not have to consider how to construct discussion postings.

As each course was different from the others and instructors had their own way of designing strategies to facilitate discussion, they also had their own grading strategies. For example Dr. Gabbert scored each week’s posts and provided feedback, but she randomly selected five scores to be counted in their course grades. She wanted students to receive consistent feedback on their performance, but at the same time, she didn’t want their postings to be so heavily weighted in the final grade. In Dr. Cannie’s class, as long as student explained their positive or negative responses and provided some background information, they got full credit.

Lastly, in all of these classes, students were required to participate regularly and actively in the discussion forum. However, Dr. Wayne was curious to know if students in her class might have participated anyway if it was not part of their grade. She would like to try only encouraging the discussion without requiring it. She stated, “I bet the people won’t discuss. I have always been curious to try. I have never seen an online class where discussion was not required.”

*Assertion 3: Instructors tried to build a unique or perspective-based discussion.*

“*Instructors tried to build a unique or perspective-based discussion*” assertion’s themes and codes are described in Table 5.

Table 5: Themes and Codes of the Assertion 3

	<b>Theme 1: Ensuring students provide unique contribution</b>	<b>Theme 2: Constructing discussions</b>
Code 1	Asking open-ended questions	Refocusing and reframing the conversation
Code 2	Requiring students to post questions about the topic	Connecting discussions to student work and real-life experiences

For a rich knowledge-building discussion with most or all students participating, prompts should allow students to provide unique contributions (Dennen, 2001). Even though the notion of unique contribution was not explicitly mentioned during the interviews, the instructors tried to build a unique and perspective-based discussion by either asking questions or requiring students to post questions.

All of the instructors had their own ways of ensuring that students provided unique contributions. For instance, Dr. Wayne stated that when an instructor opens a prompt with a question, s/he will get nearly same answer every semester because even if the question is open-ended, students are always trying to guess what the teacher wants. Thus, she decided to have students post their own questions about the readings. She found this type of discussion increased interaction between students in her class. Additionally, she found that kind of a discussion forum contained a single question and answer queries to that question, rather than extending the conversation on the topic. Similarly, in Dr. Cannie's class, students rather than the instructor posted their own questions. After the questions were posted, Dr. Cannie added further questions or clarifications based on the discussion. In this way, she believes she ensured that each student made a unique contribution to the discussion.

The other two instructors in this study asked open-ended questions in the forums. Dr. Gabbert reported that she turned the discussion into a new direction by refocusing and reframing the conversation after the middle of the week. She did this by asking new questions or refining the discussion to get unique contributions. She stated that she had two reasons to do this. First, by the middle of the week she felt that the conversation would be getting stable, no one has saying anything new "because the question had been changed so there is still just responding to the question by Thursday and they were all kind of saying same thing." Second, she does not want "to make it easy enough so they [students] could get a sense of what people had said. And then, make their contributions."

Mr. Gary ensured unique contribution by constructing discussions in which students could to talk about their work or real life experiences. He stated, "I don't base the discussion questions on the readings, I base them on application of those readings to current issues ... so I think the currency really changes the equation." In the system that the university use in Dr. Gary's class, the instructor does not have an option to categorize the threads, such as this section is week 2 and the other section week 3. Instead, the threads are show up in the order which everyone last posted to. Thus, Dr. Gary tries to be more careful about the way he name the threads so the students and he can quickly look down and find what they want.

*Assertion 4: Instructors feel the need to be present in the discussion forum.*

"Instructors feel the need to be present in the discussion forum" assertion's themes and codes

are described in Table 6.

**Table 6. Themes and Codes of the Assertion 4**

	<b>Theme 1: Providing scaffolding and motivation</b>	<b>Theme 2: Finding appropriate balance of presence</b>
Code 1	Providing feedback	Too little participation
Code 2	Providing example posts	Too much participation
Code 3	Asking additional questions	-
Code 4	Creating a hallway	-

Dennen (2001, 2005) concluded that when extrinsic motivation was provided in a manner that was clearly and explicitly relative to participation, such as grades, feedback, and requirements, students are more likely contribute to the discussion. Providing enough feedback so that students know instructor was reading their messages is another important factor that influences regular participation (Dennen, 2005; Mazzolini and Maddison, 2007). All the instructors interviewed in this study indicated their use of extrinsic motivation such as asking additional questions, providing feedback, and being involved in the discussion forum. They all had their own ways of providing extrinsic motivation. For example Dr. Gabbert noted, "I think it is important that students hear from each other but they also need to hear from their instructor in a regular basis." Mr. Gary stated that his way of providing extrinsic motivation was to ask additional questions, which also increased student participation.

Like I said I am normally there to set roles and expectations in the conversation, so based on the prompt I normally let them talk for a little while. [and then] I normally often provide a secondary prompt, which is normally a more current prompt. I have prompts that are pretty stable, which they have to respond to. And then I will provide a secondary prompt, which is more insightful, that will give them some more current things to think about and respond to. What it does it gives them more opportunities to get their participation going, if the conversation is moving slowly (Mr. Gary).

As stated in the literature, finding the appropriate balance of faculty participation is challenging in asynchronous discussions (Schindler & Burkholder, 2014). Too little faculty participation may result the discussion stay off topic or students may feel isolated when they do not see interaction from the instructor (Maddix, 2012; Rovai, 2007). On the other hand, too much participation, may be overpowering than encouraging for the students so they may feel like they have nothing to contribute (Maddix, 2012). According to the literature, instructors need to find a balance of online discussion presence because in classes where the instructor's contributions equaled the total student contributions, and in classes where instructor communication was minimal, there was little peer interaction (Dennen, 2005; Rovai, 2007). Even though all participants tried to achieve balanced instructor presence, they still differed from each other in level of involvement in the forum. For example, while Dr. Cannie participated in the forum when students had questions or when they misunderstood something. Dr. Wayne's forum participation was higher than that of any students in the class, according to numerical log of discussion participation. Instructors should be careful to not dominate the forum; if they do, students could develop the expectation that all dialogue should center around the instructor. Dr. Wayne showed the students that she read their posts by not just answering their questions but also giving them praise for the parts of the discussion that she felt they had

really done well. However, based on the numerical log of discussion participation, her participation was too dominant as it was greater than any student's posting in the forum. On the other hand, Dr. Cannie and Dr. Gabbert reported that they maintained a consistent presence with a selective response model. For instance, Dr. Cannie took part in the discussion when students needed her help or when they ask for additional information. Following is a part of Dr. Gabbert's syllabus:

Finally, I will try to respond to many of your questions and discussion points (usually on Thursday); however, don't expect me to respond to all of them. I'd like you to discuss with each other and I've found that sometimes my comments actually interfere with that. It seems to work better at times when I hold back and see what others in the class think. I know I don't have all of the answers, and in many cases, some of you will have much better responses than I could ever come up with (Dr. Gabbert)

In summary, even though instructors felt the need to be present in the discussion forum to help guide its direction, they also needed to be careful to not to dominate the forum. A productive balance of online discussion presence was the one of the methods that needs consideration. Responding each comment in the discussion forum is not reasonable and educationally desirable from a time-management perspective, it is better to encourage participation without making it teacher centered (Garrison & Cleveland-Innes, 2005). Additionally, Garrison and Anderson (2003) provided three categories of teaching presence as design, facilitation, and direction. They would help instructors to create and sustain instructor presence in online environments.

In all of the courses in this study, the discussions were the place where students interact with each other and where they interacted with the instructor the most. The instructor believes the power of the discussion forums, as Dr. Wayne said without the forums, the students would just go off and read on their own and do their assignments and their group projects on their own. The evaluations of the Dr. Wayne's class showed that the students found the discussion forum was the most valuable part of the course and Dr. Wayne was agreed as she said "as an instructor I would say that discussion forums were where my real interaction and teaching occurred. As she stated, she used the discussion forums to not just answering the students' questions but she also provided feedback. Some examples from her interview:

"'oww this was a terrific post,' 'you know, I love the reading you included,' 'I looked at the extra materials that you attached.' So I tried to give them that kind of feedback when I would respond. Not just answering their questions but also giving them phrases for the parts of the discussion that I felt like they had really done well."

In addition to the discussion forums that are specifically for discussing the course content, having forums for "informal and relational connections" is recommended in the literature to develop social presence in the class. This kind of a forum is critical to creating an interactive place in an online course. In this respect, Dr Gabbert created a "hallway" forum where students can talk about anything or ask their questions. As she reported, she was not able to check this forum everyday so once a question got posted, the other students respond to saying "the syllabus is saying this," "but she said this in the discussion forum," or "she may be meant this." Thus, the forum became a platform where students guess what the instructor could mean and this creates a lot of speculation. Until the instructor checks the "hallway," it can quickly get out of hand. However, in a face-to-face classroom, when a student pose a question about a project, the instructor would just answer it, so no need for guessing games. This example also shows the importance of having explicit guidelines and expectations in the online classes. The more the assignment guidelines are provided, we can expect the less questions. This does not mean explicit guidelines will

provide no questions but it will at least minimize them. In another example, Dr. Wayne tried to use chat function one time but as she reported even though the students wanted those chats, “when I did they didn’t join. So I was chatting to hardly anybody. And it was a little bit disappointed. I think there would be a way of doing that.”

## DISCUSSION AND CONCLUSION

Since online course offerings continue to proliferate, there has been remarkable growth in online enrollments (Allen, Seaman, Poulin, Straut, 2016; Boston & Ice, 2011) and effective online courses are highly dependent the success of online discussions (Maddix, 2012), this study has an important role for every instructor and instructional designer to improve the effectiveness of their asynchronous online discussions. In addition by better understanding what online instructors are already doing, the online education research may rethink their guidelines or what a teacher might need.

This study qualitatively examined design and facilitation strategies that four instructors used in their online courses. The data revealed that while giving their attention to some of the design and facilitation strategies, the instructors may lose others in the facilitation of online courses. Some areas that still require consideration by those designing and teaching online courses include facilitating online collaborative teams, considering self-regulation strategies when designing the course, creating a discussion rubric that evaluate cognitive, teaching, and social presence, optimal level of instructor presence in the discussion forum, and having specified time parameters for the discussion posts.

The benefits of collaborative learning are well documented in the literature, (Dillenbourg, 1999; Oakley, Felder, Brent, & Elhadj, 2004), and considerable research on the benefits of collaboration in teaching and learning is available; however, some students resist team-based approaches in online environment. As found in the Smith, Sorensen, Gump, Heindel, Caris and Martinez (2011) study, online students were less satisfied with group work compare to their peers in a face-to-face classroom. The instructors in this study still reported that their students were more resisted to the group projects compared to individual projects. Thus, the future research should focus on instructional design for online collaboration more. More guidance about how to conduct a successful online collaboration and investigating the instructional design strategies for online collaborative teams is needed.

As the instructors reported in this study, the flexibility of online learning comes with a bit of a trade-off for the students as they need to be highly self-directed and self-regulated in an online environment. While the instructors design and develop online learning environments, should keep in mind that transferring their face-to-face courses to online will not necessarily result in the same learning outcomes. As Broadbent and Poon (2015) suggested “teachers should ensure they fully utilize the benefits afforded by online environments, such as flexibility, while carefully designing for the development of self-regulatory skills” (p. 12). When designing an online course, the instructor or instructional designers should construct the course with the social, teaching and cognitive presences in mind. The instructional materials in an online course should be easy to find, comprehend, and engaging for the students, especially since self-regulation is an important topic in an online learning environment. The future research may focus on the self-regulation research in online learning environments and investigate its influence on student learning with the light of design and facilitation strategies the instructors use.

Closely related to self-regulation in online learning environments, this study found providing clear expectations for critical thinking is an important approach that should be adopted by online instructors. Creating a discussion rubric that evaluate cognitive, teaching, and social presence might encourage students to use the expectations as a guide and as a tool for self-assessment.

It is also found that instructor presence requires consideration because an optimal balance of presence was not provided by all of the instructors in this study. Baran & Correia (2009) and Dennen (2001, 2005) noted that problems arise when instructors are either too dominant or too absent in the discussion forum. Students became more involved in online discussions when the facilitator participated as a guide and provided feedback and encouragement (Nagel et al., 2009). At the same time, a too-dominant presence of a facilitator in a discussion board might hinder student interaction (Dennen, 2001, 2005). Thus, online instructors should be careful about their level of involvement in asynchronous discussions.

The other area requiring consideration is the multiple deadlines or specified time parameters, which not all the instructors used. According to Gilbert and Dabbagh (2005) and Humphries (2010), requiring students to post on certain days throughout the week overcomes the issue of posting right before the deadline. Thus, the multiple deadline approach or having specified time parameters is recommended for asynchronous discussions.

A review of the literature revealed several specific approaches that promote critical thinking in asynchronous discussions. These findings may serve as a support for future research focused on providing guidelines for design and facilitation within asynchronous discussions. Some of the suggestions such as facilitating online collaborative teams, considering self-regulation strategies when designing the course, creating a discussion rubric that evaluate cognitive, teaching, and social presence, optimal level of instructor presence in the discussion forum, and having specified time parameters still need consideration, as they were not implemented in some of courses examined in this study. These areas may be studied more to generate better understanding of their effects on student participation and to provide clear suggestions to online instructors on their use.

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