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Management **Students' Perceptions of** Online Teaching Quality

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Abstract

This study consolidates survey data from focus groups of undergraduate business students at California State University, San Bernardino, and its Palm Desert Campus to identify student-based perceptions of quality online instruction. Exploration includes three main concepts: 1) the factors affecting students' perceptions of quality online education, 2) the relative importance of these factors under different conditions, and 3) a summary of students' recommendations. The main concepts subdivide to probe seven distinctive perceptions of: 1) basic online modality (e.g., online gradebook), 2) teaching presence (e.g., customized feedback), 3) instructional design (clarity of structure and communication), 4) cognitive presence (e.g., intellectual stimulation), 5) social or student-to-student presence, 6) online social comfort (comfort interacting online), and 7) interactive online modality (e.g., videoconferencing and small groups). The summary reveals distinctive perceptions: 1, 2, and 3 rank high for students' while, recommendations disclose that students' feel instructor training and motivation are critical for high-quality online learning.

Key words: *Online teaching quality; basic online modality; instructional design; teaching presence.*

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Introduction

The notion of what constitutes quality online education has received wide attention in the higher education literature (Prinsloo, 2016; Zawacki-Richter & Naidu, 2016), and the management education literature has been involved in many of the topics (Arbaugh, 2000, 2005, 2011; Webster & Hackley, 1997; Marks et al., 2005; Garrison & Arbaugh, 2007; Ivancevich et al., 2009; Cater, 2012; Mathews & Bhanugopan, 2014; Sloan & Lewis, 2014; Wisneski et al., 2015; Sebastianelli et al., 2015; Duesing et al., 2016; Riley et al., 2017). Nonetheless, while the management-oriented literature has continued to accumulate, **Arbaugh's call for more comprehensive measures of student learning** (2011a), with more sophisticated modelling (2011b), has not been fully addressed.

The concept of learning achievement is insufficient to understand online learning quality because **one's** perspective of quality in online education tends to be largely determined by the role of an individual in the process, and what that individual values most highly (Tanner et al., 2009; Otter et al., 2013; Arbaugh, 2014; Chow & Croxton, 2017; Kebritchi et al., 2017). Accrediting bodies tend to focus on meeting proof of effectiveness and technical standards (Grandzol & Grandzol, 2006). Institutions tend to focus on student satisfaction, institutional efficiency, reputation, and rigor (Jung, 2011; Roby et al., 2013). Faculty tend to focus on their own satisfaction, faculty workload, subject coverage, and student participation (Tomei, 2006; Bollinger et al., 2014; Horovitz et al., 2015; Kearns, 2016; Mansbach & Austin, 2018). Finally, while students take into account learning achievement (Marks et al., 2005; Shen et al., 2013), they also judge quality education as a function of instructor responsiveness, their enjoyment of classes, and comfort in the learning environment, among other factors (Webster & Hackley, 1997; Arbaugh, 2000; Mathews, 2014; Sebastianelli et al., 2015). To address the limitations of prior research, this study is concerned with identifying the perceptions of quality from the perspective of management students.

Literature Review

The complexity of the notion of quality and how to achieve it is reflected in the major schools of thought in education. Behaviourism emphasizes exposing students to ideas, precise examples, and carefully designed opportunities for rehearsal and feedback after readings, lectures, and question-and-answer opportunities (Skinner, 1954). Cognitivism emphasizes more loosely designed experiences, observation, and analysis of actual experience, and generally relies more heavily on large group discussions and instructor-designed projects (Bandura, 1977). Constructivism enforces the idea that students are largely responsible for creating their own subjective understanding of the world and encourages students to seek out their own experiences. It relies more heavily on numerous small and large student projects that are student identified and designed (Dewey, 1938; Bruner, 1961). Connectivism is a perspective which espouses that much of learning is accomplished best in a group setting, and that many of the most important things to learn about are cooperation, synergy, collaboration, and networking, frequently antithetical to the traditional classroom with its underlying competitive logic. Connectivism tends to rely heavily on group problem solving and shared-goal projects (Siemens, 2005; Downes, 2010). Ultimately, while each of these theoretical perspectives is informative and sometimes useful in certain classes of situations, none is universally applicable as a sole approach in robust higher education settings.

Applied learning theory tends to glean the insights of all these perspectives, encouraging instructors to adapt them all as necessary in various contexts. For example,

the well-known insights of Chickering and Gamson (1987) stipulate the seven basic practices for undergraduate education are: (1) emphasizing time on task; (2) encouraging active learning; (3) giving prompt feedback; (4) communicating high expectations; (5) encouraging contact between students and faculty; (6) developing reciprocity and cooperation among students; and (7) respecting diverse talents and ways of learning. The value of this approach was supported by Graham et al. (2001).

While these grand and applied theories of education are useful in discussing institutional and faculty approaches to teaching and have a substantial effect on some aspects of students' **perceptions, nonetheless**, students have their own unique perspectives as recipients, rather than facilitators, of education. Seven factors commonly identified in **terms of students' perceptions of quality are discussed below.**

The criticality of an instructor possessing *basic technical competence*—such as online grade book and grading tools, announcements, types of submissions, quiz functions—is well documented (Palmer & Holt, 2010; Jung, 2011). For example, Webster and Hackley (1997) noted in a study of management students that quality of **technology, instructor's attitude** toward technology, and instructor control of technology are necessary to create the initial baseline of competence upon which course success is built. That is, when faculty are poorly trained in the learning management system features and are ill-adept at thinking through the technological adaptations to be made in online classes, poor quality is essentially guaranteed.

Technical competence is extensive and includes more than just mastery of basic learning management system functions. High-quality interaction (*online interactive modality*) requires more sophisticated tools such as instructor-generated videos, small group discussion forums, videoconferencing, and/or lecture capture (Arbaugh, 2000; Ivancevich et al., 2009; Wisneski et al., 2015). To use such tools well, more effort and expertise is required of faculty. For example, in a study related to an operations management course, Sloan and Lewis (2014) highlight the potential effectiveness of lecture-capture methods in providing flexibility for students to vary times and to review lectures a second or third time.

Instructional design refers to the students' perceptions of the organization of techniques used to provide input, rehearsal, feedback, and evaluation. Instructional design primarily occurs prior to the course beginning. A prime example in online education is the so-called **"flipped classroom"** (McGowan & Graham, 2009; McGivney-Burelle, 2013; Maycock, 2018) in which students move to rehearsal activities faster and more frequently than in traditional classrooms, generally with less instructor lecture (Jung, 2011; Martin et al., 2018). In a concrete case study, Duesing, Ling, and Yang (2016) address the specific characteristics of well-designed instructional guidelines in an online operations management course.

Teaching presence, on the other hand, refers to students' perceptions about the quality of communication in lectures, directions, and individual feedback (Marks et al., 2005; McGowan & Graham, 2009; Jaggars & Xu, 2016). It is sometimes referred to as the student-instructor factor. It focuses on **the instructor's presence as the course progresses.** In a study of MBA students, Wisneski, Ozogul, and Bichelmeyer (2015) found that because of the numerous tools provided by learning management systems, teaching presence in online classes has the potential to exceed face-to-face classes, with the caveat that instructor diligence also has to exceed face-to-face classes.

Social presence is the term used to refer to students' perceptions of the quality of student-to-student interaction. Social presence focuses on the quality of shared learning and collaboration among students, such as in threaded discussions responding to a challenge question (Garrison & Anderson, 2003; Kehrwald, 2008). The "community of inquiry" model delineates teaching presence, cognitive presence, and social (or student-to-student) presence and gives relatively equal importance to each (Garrison & Arbaugh, 2007), but empirical evidence in management studies has shown it to be significantly less critical for achieving a competent course than teaching and cognitive presence (Arbaugh, 2011a; Sebastianelli & Tamimi, 2011). However, one subsequent study done in an MBA class observed that student perceptions of a high-quality course could be more affected by the quality of student-to-student interactions than professor-to-student interactions (Sebastianelli et al., 2015).

A specific aspect of social presence that has received research attention related to initial and long-term adoption is the level of *online social comfort* students feel in the class (Sun et al., 2008; Ivancevich et al., 2009; Liaw & Huang, 2013; Mathews & Bhanugopan, 2014; Al-Gahtani, 2016). Online social comfort can be measured either as the level of anxiety experienced, or the degree to which students feel comfortable participating in online discussions. This factor has only been indirectly reviewed in the management literature to date.

Cognitive presence refers to the engagement of students in such a way that they are stimulated by the material and instructor to reflect more deeply and critically, seek to understand different perspectives, and are able to apply material (Garrison & Cleveland-Innes, 2005). It is also referred to as the student-to-content factor. In one management study, Sebastianelli, Swift, and Tamimi (2015) found that course content was the most important factor across an array of outcomes, in particular related to perceived learning (supporting a similar finding by Marks et al., 2005).

There is no perfect mix of the factors above for faculty to focus on because the situational and student preferences vary so substantially. However, much of the situational variation, as well as student preferences, can be captured by paying attention to disciplinary differences (Biglan, 1973; Becher, 1994; Neumann et al., 2002; Arbaugh, 2005; Shulman, 2005; Smith et al., 2008; Ventura & Moscoloni, 2015). While all students may have very basic similarities, there will be critical learning, and therefore teaching, differences between, say, management and chemistry. Management students might find small group chat sessions invigorating, while chemistry students might find them off-putting.

A second major situational variable is the level of instruction and the concomitant goals (Arbaugh, 2010). Pre-med students typically start by learning biology and chemistry in large, lecture-intensive classes because of the need for multiple repetitions of factual material that they must accurately absorb. Then medical students learn in cohorts in medical school as they observe and rehearse higher level skills under close supervision. Finally, as medical residents, they are loosely observed and critiqued while initially performing their profession. Thus, there will not only potentially be a variation in the perceptions of quality between physics and business majors, but also among lower division, upper division, and graduate students.

A third situational factor that effects students' perception of quality education is the **evolution of technology and students' acculturation to technology**. Because online education is technology-mediated, the level of comfort student has with technology is a far more important factor in online modes than in traditional modes. One example of technology evolution is the general improvement in online teaching reliability over time. As reliability

has increased, it has become a less significant **factor in students' general perception of quality, until and unless reliability is poor. That is, students' expectation of reliability is a "hygiene" factor (Herzberg, 1964), only noticed in its absence which is not common today.** Data collection features in online learning management systems have made it easier for instructors to monitor student progress and provide timely feedback. Integration of plagiarism-checking programs **such as turnitin.com have enhanced instructors' ability to** reduce cheating and subsequently improved student perceptions of instructional fairness. A contemporary trend of note is the improvement in videoconference technology, which has been available for several decades but until recently was expensive, unreliable, difficult to use, and monolithic. Recent improvements in videoconferencing are transforming many business and medical operational practices (e.g., virtual medical clinics), and promise to do so in the instructional world as well.

The literature addressing online teaching and learning from the management perspective has established a strong data base but has yet to provide the comprehensive empirical approach called for by Arbaugh (2011a, 2011b).

While numerous studies have provided partial lists of factors affecting university student perceptions of quality online education, no studies to date have brought together a comprehensive set of factors. The first research question addresses the need to get a more comprehensive and comprehensible set of empirically derived factors related to the critical elements of quality for students.

1. Using **exploratory factor analysis, what factors emerge from management students' perceptions?**

The second research question addresses the issue that not all factors will be equally important to management students.

2. What factors matter most to management students who take online classes?

The third research question addresses the insights derived from the number and weighting of the factors being explored.

3. What insights do management students provide in terms of online teaching? What recommendations can be made from **students' perceptions?**

Method

In this study, 207 management-major undergraduate students completed the survey via Qualtrics. The data collection was from fall 2018 to spring 2019. Participants were asked to rate the levels of importance of seven features of online classes. They rated basic online competence via items on features such as online gradebook and online quizzes, the importance of instructional design such as course navigation, teaching presence (e.g., **"Online instructor clearly communicates important course goals."**), **social comfort (e.g., "I feel comfortable participating in online course discussions")**, **social presence (e.g., "Getting to know other course participants gives me a sense of belonging in the course")**, **cognitive presence (e.g., "Posing problems in online courses increases my interest in course issues")**, and interactive online modality with items on video lectures, video-conferencing, and small groups discussions.

Students were asked about their ages. The largest group (108 count) were 17-22 years old. The second largest response (70 count) were 23-29 years old. The smaller response groups were 30-34 (18), 35-40 (5), and greater than 41 (6). The majority of the

students identified as Latino (142 count). The next group was White (25) and Asian Pacific Islander (23). Ten students identified as African Americans and seven students responded as other.

Students were asked which year they were in the program. The possible responses were 2-6. Out of 207 responses, the highest count (119) was third year students. The second highest count (83) was fourth year students. Only one student was a fifth year student and two students were both second and sixth year students.

Respondents were asked if they worked full or part time or did not work. Part time workers made up the majority of respondents (87 count), closely followed by full time workers (74). The smallest group of respondents were those that did not work (46). Respondents were also asked how far they lived from campus. Students lived on average 18 miles from campus.

Most students had not taken an online class in high school (171 count). Only 36 had taken a class online in high school. The majority had taken an online class at the university (167). The students took, on average, three online classes.

After the completion of the survey, an additional group of 76 management students were asked focus-group-like questions (i.e., open-ended) related to the best and worst practices of each of the items. No demographic information was collected from those students. A summary of their responses can be found in the appendix.

To examine the number of constructs and structure of the items, we conducted an exploratory factor analysis using JMP Pro 14. Researchers in psychology and education professions commonly use factor analysis. Exploratory factor analysis allows researchers to explore the underlying factors of a set of items and analyze which items go together (DeCoster, 1998).

Results

The highest number of students strongly agreed that they were comfortable with technology (71). This response was closely followed by those in simple agreement (62). As shown in Table 1, most students responded that their reason for taking an online class was that it was convenient (136).

Table 1:
Reasons for Taking or Not Taking Online/Hybrid Classes

Why Taking Online/Hybrid Classes (n=167)			Why Not Taking Online/Hybrid Classes (n=44)		
Reasons	Count	Percent	Reasons	Count	Percent
It is convenient (e.g., distance, flexibility).	136	81%	They are not available.	9	20%
I like the style of teaching done.	46	28%	They are not well taught.	2	5%
It helps with challenges in F2F scheduling.	49	29%	I learn better in classroom.	28	64%
Other.	27	16%	They cost more.	1	2%
			Other.	4	9%

The students surveyed felt, on average, that they learned more in face-to-face classes (55%) and enjoyed face-to-face classes more as well (44%). Nonetheless, in general, they also had a positive impression of online learning (78%), found online instructors responsive (67%), and were comfortable with online learning technologies (80%). While half of all students express a preference for face-to-face, 67% still say they agree or strongly agree that they enjoy online learning. Indeed, as it turns out, 17% actually prefer the online mode over face-to-face. However, convenience and scheduling flexibility are probably as important as online quality in driving online enrolment.

A principal component method with Varimax rotation was applied to explore the factor construct of student perceptions of online teaching/learning elements. The item correlations for student perceptions of importance coefficients were greater than .40 which indicates acceptable use of factor analysis.

Seven factors were identified with Eigen values greater than one: the first, labelled teaching presence, had high loadings (above 0.70) in eight survey questions; the second, labelled instructional design, had loadings (above 0.5) in eight items (**although “interaction with other students”** had a 0.5303 loading, it is omitted as the item theoretically aligns better with its primary loading in social presence); the third factor, cognitive presence, had loadings in six items; the fourth, social presence, had four items; the fifth, basic online modality, had four items; the sixth factor, online social comfort, had three; and lastly, interactive modality had three (see Table 2).

Table 2:
Factor Loading

Survey Items	Factor 1 Teaching Presence	Factor 2 Instructional Design	Factor 3 Cognitive Presence	Factor 4 Social Presence	Factor 5 Basic Online Modality	Factor 6 Online Social Comfort	Factor 7 Interactive Modality
1. Online instructor provides feedback that helped me understand my strengths and weaknesses relative to the course's goals and objectives.	0.8227						
2. Online instructor helps keep the course participants on task in a way that helped me to learn.	0.7841						
3. Online instructor provides clear instructions on how to participate in course learning activities.	0.7788						
4. Online instructor encourages course participants to explore new concepts in this course.	0.7688						
5. Online instructor provides feedback in a timely fashion.	0.7491						
6. Online instructor clearly communicates important due dates/time frames for learning activities.	0.7437						
7. Online instructor helps to focus discussion on relevant issues in a way that helped me to learn.	0.7424						
8. Online instructor clearly communicates important course goals.	0.7037						
9. sufficient rehearsal of material, skills to be learned, etc.		0.8285					
10. instructor having enthusiasm		0.8186					
11. instructor providing feedback		0.7595					
12. the use of a variety of techniques to communicate and learn		0.7499					
13. navigation (e.g., being able to find what you want)		0.6388					
14. a sense of community in the class		0.6354		0.4988			
15. including student goals		0.6340					
16. syllabus (more detailed than in a face-to-face class)		0.5311					
17. Online course provides opportunities for meaningful reflection on course content.			0.8021				
18. Course activities stimulate my curiosity in online courses.			0.7739				

19. Online learning activities help me construct explanations/solutions in online courses.			0.7721				
20. Online discussions are valuable in helping me appreciate different perspectives.			0.7329				
21. I can apply the knowledge created in online courses to my work or other non-class related activities.			0.7293				
22. I can utilize a variety of information sources to explore problems posed in online courses.			0.7088				
23. Posing problems in online courses increases my interest in course issues.							
24. Getting to know other course participants gives me a sense of belonging in the course.				0.8668			
25. I am able to form distinct impressions of other course participants.				0.8660			
26. Online or web-based communication is an excellent medium for social interaction.				0.7486			
27. interaction with other students		0.5303		0.5638			
28. allowing students to make online submissions					0.8675		
29. online gradebook					0.7850		
30. online grading of assignments by instructors					0.7316		
31. online quizzes					0.5356		
32. I felt comfortable disagreeing with other classmates in online courses while still maintaining a sense of trust.						0.8237	
33. I felt comfortable participating in the course discussions.						0.8002	
34. Online discussions help me to develop a sense of collaboration.				0.4618		0.5398	
35. Zoom or other videoconference methods							0.8445
36. video lectures							0.7903
37. small groups discussions (chat rooms)							0.4643

*Seven factors explain 67% of the variance. Decimal places and loadings less than .40 as well as secondary loadings omitted.

In addition to being reliable, the factors are coherent; that is, the factors have relatively high internal consistency (Table 3). Item analysis provides perspective on both the overall factors, as well as the importance of individual instructional practices from a student perspective. The factors are discussed by the overall level of importance. In addition to the quantitative findings, focus group recommendations by students illustrate best and worst practices from their perspective.

Table 3:
Priorities of Factors and Factor Reliability

Rank	Critical Success Factors	# of Items	n	Mean	Std Dev	Cronbach's α
1	Basic online modality	4	166	1.4864	0.5541	0.7663
2	Instructional design	8	166	1.8532	0.6848	0.8791
3	Teaching presence	8	163	1.9256	0.7401	0.9188
4	Online social comfort	3	164	2.1545	0.9017	0.8335
5	Cognitive presence	6	160	2.0771	0.7943	0.9127
6	Online interactive modality	3	166	2.2458	0.9066	0.6913
7	Social presence	4	164	2.6870	0.8615	0.8434

Basic online modality refers to the most basic functions of online teaching. Online submissions and use of an online grade book both have above 90% importance ratings (the top two categories of a five-point Likert scale). Above 80% in importance are online grading and online quizzes. These results suggest that students feel very comfortable with basic online functionalities and expect them to be used. In terms of coherence, one item is not immediately apparent: online quizzes. As it turns out (in informal focus groups), online quizzes are more related to rehearsal than to evaluation because most instructors use low-point and/or multiple-try strategies. From this perspective, students think that good courses have low-**anxiety**, “mechanical” activities from which they can practice and get immediate detailed feedback. See Table 4 for the basic online modality statistics.

Table 4:
Basic online modality by student perceptions of importance (%)

Item; N; mean	Important; very important	Neutral	Not important; not very important
Allowing students to make online submissions; 166; 1.3	92	7	1
Online grade book; 166; 1.4	91	8	1
Online grading of assignments by instructors*; 166; 1.5	87	11	1
Online quizzes; 166; 1.7	81	18	1

*Rounding error

Two factors relate to instructors’ “**direct**” teaching roles. **Instructional design** includes those items that are largely built into the course prior to teaching it. Teaching presence includes items that an instructor provides during the teaching of a course. Most important to students, in terms of instructional design, is navigation, or how the course is structured. Because of the large number of artifacts and elements in an online course, this is often not necessarily intuitive for instructors. Above 80% in importance is the building in rehearsal opportunities and instructor feedback. In addition to the “**mechanical**” aspects of rehearsal discussed above in basic online modality, rehearsal

can occur in small groups, homework, or via lectures. Two items are about 70% in importance: instructor enthusiasm and the use of a variety of techniques. The only item in this factor that seems out-of-place at first glance is instructor enthusiasm, which might seem more related to teaching presence. However, students perceive the **instructor's enthusiasm to be less about a buoyant personality as it might be in a face-to-face classroom**, and more about enthusiastically spending the extensive time necessary to construct high-quality, customized teaching artifacts.

Variety of techniques can help both provide alternate means of learning (e.g., providing the transcript for a video), or allaying boredom from excessive repetition of a single tool and method (e.g., using a single class forum for all student interaction). The quality of the syllabus and inclusion of student goals is at or above 60%. In face-to-face classes syllabi are useful, but because of weekly reminders and oral explanations, they are not as critical as in online classes. Syllabi in online courses are invariably longer and more detailed than in face-to-face classes. Because undergraduate students tend to only have high-level **goals and tend to rely on the instructor's expertise**, this element is of moderate importance. A sense of community in the way the course was built was the least important (in the 50% range), e.g., via small groups, group projects, etc. Students perceived community as more of a by-product or means than as an end. See Table 5 for details.

Table 5:
Instructional design by student perceptions of importance (%)

Item; N; mean	Important; very important	Neutral	Not important; not very important
Navigation; 166; 1.4	91	7	2
Instructor providing feedback*; 166; 1.6	83	14	2
Sufficient rehearsal of material, skills to be learned, etc.*; 166; 1.9	83	22	6
Instructor having enthusiasm; 166; 1.8	76	19	5
The use of a variety of techniques to communicate and learn; 166; 1.9	75	20	5
Syllabus (more detailed than in a face-to-face class); 166; 1.6	61	36	3
Including student goals; 166; 2.3	60	30	10
A sense of community in the class [also loads with social presence]; 166; 2.3	54	34	12

*Rounding error

Related to teaching presence, the top three items are all about clear communications and instructions, two of which are above 80% and one of which is in the high 70% range. Unclear (or missing) instructions/communications mean that students may do an assignment incorrectly, at the wrong time, or miss it altogether. The next two items in the 70% range have to do with time on task and focused discussions which, in turn, increases learning efficiency and reduces the number of "way-laid" interchanges. Providing feedback is in the high 60% range in importance in terms of being customized to individual students and providing it on a timely basis. In the low 60% range is encouraging students to explore new concepts which, in this context, has more to do with nuanced concept articulation than intellectual stimulation per se. See Table 6 for details.

Table 6:
Teaching presence by student perceptions of importance (%)

Item; N; mean	Important; very important	Neutral	Not important; not very important
Online instructors provide clear instructions on how to participate in course learning activities; 164; 1.7	82	16	2
Online instructors clearly communicate important due dates/time frames for learning activities; 163; 1.7	81	16	3
Online instructors clearly communicate important course goals*; 165; 1.8	79	18	2
Online instructors help keep students on task in a way that helps them learn efficiently; 164; 2.0	72	21	7
Online instructors help to focus discussion on relevant issues*; 165; 2.0	70	24	5
Online instructors provide feedback that helps students understand their strengths and weaknesses relative to the course's goals and objectives ; 165; 2.0	69	23	8
Online instructors provide feedback in a timely fashion; 165; 2.0	67	27	6
Online instructors encourage students to explore new concepts; 164; 2.2	61	28	11

*Rounding error

Online social comfort is one of two factors related to the social learning space. This factor emphasizes the comfort of participating with classmates. Over 80% of the respondents found participation in online discussions important, and over 60% thought being able to disagree with students comfortably was important. The development of a sense of collaboration was only thought to be important in the 50% range and was an item that also loaded with social presence. See Table 7 for details.

Table 7:
Online social comfort by student perceptions of importance (%)

Item; N; mean	Important; very important	Neutral	Not important; not very important
I feel comfortable participating in online course discussions*; 164; 2.0	80	22	7
I feel comfortable disagreeing with other classmates in online courses while still maintaining a sense of trust*; 165; 2.1	66	27	8
Online discussions help me develop a sense of collaboration [also loads with social presence]; 165; 2.4	56	32	12

*Rounding error

Cognitive presence is about enhancing application, reflection, different perspectives, and curiosity. Over 70% of the respondents reported applicability of knowledge attained and opportunities for meaningful reflection were important. Four other items were in the 60% range. They were: discussions helping to appreciate different perspectives, utilizing a variety of information sources to explore problems, constructing explanations and solutions, and stimulating curiosity. See Table 8 for details.

Table 8:
Cognitive presence by student perceptions of importance (%)

Item; N; mean	Important; very important	Neutral	Not important; not very important
I can apply the knowledge created in online courses to my work or other non-class related activities; 161; 1.9	74	22	4
I can utilize a variety of information sources to explore problems posed in online courses; 163; 2.0	67	28	5
Online courses provide opportunities for meaningful reflection on course content*; 161; 2.1	73	20	8
Online discussions are valuable in helping me appreciate different perspectives*; 163; 2.1	69	25	7
Online learning activities help me construct explanations/solutions; 161; 2.1	66	29	5
Online courses have activities that stimulate my curiosity*; 164; 2.2	64	27	8

*Rounding error

While basic online modality is the most important factor for students because it is so fundamental to online classes, online interactive modality is far less critical to management students as individual elements. Most important was the provision of video lectures which was in the 60% range. Teleconferencing and small group discussions were only in the 40% range, with approximately 20% responding that these elements were not important. This was somewhat surprising since small group discussions are widely used in online classes. See Table 9 for details.

Table 9:
Online interactive modality by student perceptions of importance (%)

Item; N; mean	Important; very important	Neutral	Not important; not very important
Video lectures; 166; 2.2	61	30	9
Zoom or other video-conference methods; 166; 2.6	44	35	21
Small group discussions (chat rooms)*; 166; 2.6	43	37	19

*Rounding error

Social presence is about the interaction of students with other students; none of the items in this factor exceeded the 50% mark. The overall importance of social interaction was in the 40% range. Three other items were in the 30% range, with the highest rated being interaction with other students. The importance of getting to know classmates and forming distinct impressions were held to be as unimportant as important by students. See Table 10 for details.

Table 10:
Social presence by student perceptions of importance (%)

Item; N; mean	Important; very important	Neutral	Not important; not very important
Online or web-based communication is an excellent medium for social interaction*; 165; 2.7	44	34	21
Interaction with other students [also loads with instructor support]*; 166; 2.7	39	42	18
Getting to know other classmates gives me a sense of belonging in online courses*; 165; 3.0	32	33	34
I am able to form distinct impressions of some classmates in online courses*; 164; 3.0	31	40	30

*Rounding error

Discussion

Based on the results of a questionnaire conducted with undergraduate management students at a large public university, analyzed using exploratory factor analysis, investigators found support for the following aspects of online teaching referenced in the literature: online technological competence (basic online modality), instructional design, teaching presence, online social comfort, cognitive presence, interactivity (interactive online modality), and social presence. While all the empirically derived categories will aid high-quality teaching, they do not do so equally. Rather pragmatically, management students find the basic technological and teaching elements most important for effective online learning (i.e., basic online modality, instructional design, and teaching presence). The next most important to students is being comfortable in discussions in online settings (i.e., online social comfort) and having an intellectually rich or useful experience (cognitive presence). Significant, but least important, were being able to get direct instruction from the instructor or interact in relatively rich communication modes (online interactive modality) and social presence. In particular, the social aspect of learning (social presence) was one that management students considered a nice-but-not-necessary element of good online teaching.

However, the qualitative comments and the follow-up focus group comments made it clear that while student-to-student interaction and interactivity are not as critical as independent goals, an absence of these elements would likely have a negative effect on other factors. For example, management students did not rate instructor-generated videos, videoconferencing, or small groups as highly as most other elements in the survey. But it would be a mistake to think because none of the elements were highly rated, that the absence of all of them would not be a major detractor of quality **from a student's perspective, nor that a** course could generally go from good-to-great without several of these elements. Each of the factors is discussed separately below.

Not surprisingly, the *technical competence of instructors* to use the basic functions of the online teaching environment is most critical to students. These elements included online submissions, grading, grade book, and quizzes for rehearsal. The focus group comments make it clear, however, a wide range of quality in terms of practice even in these basic functions occurs. Just because a student can submit an assignment online does not mean that they get a submission acknowledgment, which can leave them in doubt. Just because instructors have an online grade book does not mean that it is well organized or up-to-date. Just because an instructor can provide an overall grade for an assignment does not mean that the instructor takes the time to use some of the many possible features that provide high-quality feedback that students crave. So the presence of all of the sub-elements is critical for an acceptable evaluation

of online teaching, but excellent teaching from a student's perspective requires high-quality practice in each of the elements.

Another essential aspect of teaching is *instructional design*, but the elements vary substantially in their criticality. Good navigation is not only something that students feel is extremely important, but also is something that they think can be substantially improved in many cases due to poor use of tabs and folders, broken links, lack of internal links, inconsistencies between the syllabus and the online materials, etc. Getting feedback on assignments is also very important in which alacrity and thoroughness are vital for perceptions of high quality. Syllabi must be much more detailed in online classes, but students still want a succinct overview of the assignments for quick reference. **A lot of "rollover" errors from previous classes related to due dates** are highly aggravating for students. Students want opportunities to rehearse the material after being provided demonstrations or models. While students perceive instructor enthusiasm as an aspect of video lectures or videoconferencing tone (e.g., lack of a monotone), students report that in online classes it is equally demonstrated via the time committed to the class and the responsiveness of the instructor. While students want the consistency of a well-designed course with easy to follow learning routines, they also want as much variety as possible without causing confusion. **Students don't** just want to be able to participate in a videoconference session, they also want it available as a recording even if they participated in the live session. While the inclusion of student goals is not as critical, when instructors inquire about student interests and experiences, and provide opportunities for students to pursue professional interests, it is well received by students. Also not as critical, but nonetheless appreciated, is the sense of community that evolves from videoconferencing, small groups, group projects, and class blogs.

Teaching presence, here, is defined as instructor communications involving or about: instructions, due dates, course goals, focus, staying on task, timeliness, and new concept exploration. Pragmatically, students are most concerned with knowing exactly what they need to do to succeed in the course. Unclear instructions, due date inconsistencies, lack of examples or models, and lack of module-level desired learning objectives are examples of substandard teaching presence **from a student's perspective**. Once students are clear on what they are to do, they are only slightly less interested in ensuring that their work is guided to be on task, discussions are focused, and feedback **is customized and timely. After the "basics" have** been accomplished, students are interested in the facilitation and stimulating presentation of new concepts.

Online social comfort is not only an important factor for students taking classes, but students' **perceptions** of online social comfort is a significant factor in determining whether they sign up for online courses in the first place. Feeling comfortable participating in online classes is facilitated when instructors provide opportunities of low-stress participation, participation is fun and engaging, and the online environment gently but firmly encourages universal participation. Also **important is students'** perception that they can be involved in robust discussions with differing points of view, without the discussion turning personal or tense. Collaboration is a nice-but-not-critical element for most students, which is facilitated in small groups, group projects, and the like.

Cognitive presence engages students in the content (thereby making learning both easier and better embedded) because of personal applicability or intellectual stimulation. Relatively important to management students is how course content can be **utilized functionally with "real world" examples**. Students like opportunities to reflect on the content in discussions and personal blogs. Because of the diversity of issues and ways of doing things, management students prefer to have a variety of perspectives **represented, not just the "average" opinion**. Additionally, students like a variety of sources available, beyond just the instructor and text, even if it is only the provision of annotated links. Significant, but rated last, management students tend to prefer the

opportunity to devise their own solutions to problems and stimulate curiosity, rather than having a course that never gets **beyond the mechanical “basics.”**

Online learning modalities focus on richer information strategies based on either adding video/audio such as in videos and videoconferencing or adding ongoing discussions such as in small groups. While online interactive modality does not score as important for students as most items in the survey when evaluated as individual items, they have many preferences about the modes that convey this aspect of online learning. **Students don't seem to expect all three modalities to be used**, but it is hypothesized that if asked about the importance of using at least one of the three modes, the response importance would have been significantly higher. Students do not expect instructor-generated videos to be broadcast quality, neither do they appreciate videos that are dull, have poor sound, and/or do not integrate visual elements. Videoconferencing is liked but has not reached the mainstream of expectations since improvements in the technology have come into the market starting about 2015. It is hypothesized that student perceptions of importance will increase, and faculty will do more to integrate this rich technology. However, students have numerous concerns such as the awkwardness of faculty in utilizing (or under-utilizing) videoconference features. To the degree that students take online courses for convenience and flexibility, the mandatory use of substantial amounts of synchronous video is a negative aspect for some students, and the low use of optional videoconference participation (often resulting in tiny live audiences) is a concern for others. The use of small groups is extensive in online management classes, but it has one of the lowest evaluations of importance. Students are concerned about lack of instructor monitoring (making it **“busy work” from students' perspectives**), customized feedback, and lack of alignment with the curriculum.

While *social presence* is much vaunted in the online teaching literature, management students see it **more as “icing-on-the-cake” than critical**, with no elements exceeding 50% importance in the survey. Students generally find student-to-student interaction to be an auxiliary element to the class that is facilitated by small groups, videoconferencing, and virtual presentations. To the degree that the class is well-organized, social presence significantly enhances a class, but in a class without introductions and well-structured activities, it can lead to awkwardness and lack of focus.

Conclusion

The limitations of the study are important to point out. The most important limitation is that the data come from a single college at a single university thus leading to the prospect of some single source bias. The study addresses undergraduate students only, not MBA, MSA, or other graduate level students who are likely to have a slightly different perspective on some factors such as interactive online modality given the higher levels of interaction graduate students are expected to have with instructors and peers. No attempt was made to examine how these factors, which are rated as important, actually affect student learning outcomes which is an altogether different type of study.

In addition, no other study has found distinguished factors based on students' ratings of online study, nor examined those factors comprehensively through conducting EFA on those factors. Nonetheless, the data paint a compelling picture of what students want. Undergraduate management students perceive at least seven significant factors affecting the quality of their online courses. Most important to them is providing basic online functionality such as online gradebook. Nearly as important is instructional design related to issues such as instructor feedback related to rehearsal, technique variety, and instructor enthusiasm, as well as teaching presence related to communication clarity in and out of the lecture space, and personal and timely feedback. Cognitive presence

related to the application of knowledge, different perspectives, and meaningful reflection is quite important as well. Important, but less so, were student-to-student interaction and interactive online modality.

Overall, the students in the study may value the more idealistic considerations such as intellectual stimulation and group learning, but they are far more concerned about pragmatic and straightforward issues related to online functionality, strong instructor presence, concrete rehearsal, and timely feedback of all types (Young, 2006; Paechter & Maier, 2010; Martin et al., 2018). Overall, students are far more concerned about well-managed and tightly taught classes than they are about overly structured courses. When they are taking online courses, students are more concerned about insufficient, rather than too much, instructor presence. In terms of the teaching philosophies discussed earlier, undergraduate students tend to want a heavier emphasis on behaviorist and cognitivist approaches, with a significant but lighter emphasis on constructivist and connectivist approaches.

Further, while students in the study on average rate the quality of online learning relatively highly, they perceive that learning achievement is, on average, still greater in face-to-face classes. The literature strongly suggests that when online classes are well taught, learning achievement is equivalent (Bernard et al., 2004; Ni, 2013; Nguyen, 2015), and when asked how much online instruction students would take if conditions were ideal, they reported about three times as much as they currently do. Thus, it suggests that instructor training and motivation are critical to overcoming a still significant gap in student perceptions of online and face-to-face classes.

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