Communication and Education: A Comparison of Student Perceptions in The Online and Face to Face Classroom.

Mathew McCabe

SUNY Oswego

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Abstract:

In an examination of literature discussing the no significant difference phenomenon, the researcher attempted to compare online class room learning experiences to traditional face to face classroom experiences. This research examines the instructor behaviors of authenticity, immediacy and clarity, which have been known to influence affective learning outcomes. By means of a questionnaire, former and current students in an unrestricted variety of classes were asked to report perceptions of the instructor communication behaviors in question. The students were to report whether the class was in the online or face to face format to generate a comparative analysis. The results are then compared between the two class formats. Results demonstrated that students in the online class format reported a statistically significant difference in perceived instructor verbal immediacy. A significant difference was also demonstrated in student perception of clarity between participants in the online class format and the face to face format.

Introduction

Technology usage is increasingly encouraged within the educational setting. This increase commonly results in more online-based classes or distance-learning (Nicosia, 2005). It is a seemingly unavoidable trend; therefore, continuing research can explore how successful online learning can be in educational communication.

As the amount of distance learning classes increases, so does the variety of classes offered. The communication discipline is no exception to this trend. Amongst the variety of communication courses offered online, public speaking has been a center of focus. Some believe that teaching public speaking online will only become easier as time passes, (Carr, 2000) but *easier* is not necessarily synonymous with *better.* Several online classrooms for public speaking give the option of videotaping the speech from the comfort of one's home or traveling to campus to use available technology for recording the speech. Carr notes that significant differences exist

between online-based public speaking and face-to-face. Particularly, a lack of spontaneous stimuli, which are more prevalent in a face-to-face classroom setting.

Several previous research studies aimed to directly compare the learning outcomes between online and face to face classrooms (Baker, J. D. 2004; Bolkan, S. 2015; Cereci, S. S. 2017; Cicco, G. 2017; Clark, R. A., & Jones, D. 2001; Fendler, R. J., Ruff, C., & Shrikhande, M. M. 2018; Grady, J. j. 2013; Luo, Y., Pan, R., Choi, J. H., Mellish, L., & Strobel, J. 2011; Russel, 1999; Woods, R. J. 2002). The study results indicate a mixed conclusions, demonstrating that learning outcomes were better in one class or the other. Rather than take end grade or student self-report data to demonstrate which format is more effective, results should be considered through the ideological lens of "apples to oranges." Meaning that understanding the communication differences and perceived differences between the two formats could build an understanding that the formats are different and should be evaluated therein.

The public speaking classroom is an excellent example of classrooms which may differ in the online setting vs the traditional setting. Particularly in affective learning outcomes. Considering the anecdotal difference discussed by Carr (2000), this study aims to assess student's success through a distance-learning classroom. This study intends to measure students' affect for the course materials, instructor behavior and receptiveness to other communication traits known to promote affective learning outcomes.

Literature Review

As technology advances, student demands change in accordance. To remain profitable, universities must accommodate to the modern shape and medium of the classroom (Gaffney & Kercsmar, 2016). One such change is an increased usage of distance-learning classrooms, also known as online classes. Online classes come in the form of a hybrid class (partially online, partially face-to-face) and a fully online class. As these changes develop, instructors must recognize that differences will exist when new technology and teaching styles are integrated into the classroom.

The Online Classroom

The online classroom, like the traditional classroom must achieve many parallel goals to be successful as an organization (Gruenert & Whitaker, 2015). Such parallels include maintaining an organizational culture and climate appropriate to the school setting. Culture and climate have profound effects on the stakeholder's feelings and perceptions of the organization (or classroom). The primary facilitator of climate and culture in the online classroom setting is the instructor, who develops and implements the strategies of engagement and interaction within the classroom (Cicco, 2017). The instructor who can create a positive climate and culture within the classroom can therefore increase competence, faculty-student rapport, positive academic performance, retention, and student satisfaction (Grady, 2013).

Additionally, the relationship between instructor and student can influence much more within the classroom, notably by means of cognitive engagement (Pilotti, Anderson, Hardy,

Murphy & Vincent, 2017). Cognitive engagement by instructors varies based on class size, adjusting to behavioral concerns of the students. Instructor engagement was also found by Pilotti et al., (2017) to maintain relationships with grading, depth of discussion in the classroom and student engagement.

The online classroom, once considered an alternative is now in the mainstream of higher education (Luo, Pan, Choi, Mellish & Strobel, 2011). The researchers identified three variables which are predictors of success in the online classroom environment: Level of control, independence and satisfaction. The variables display a positive relationship regarding the likeliness to choose and online class format and be successful in the online classroom. The student who is more independent is more likely to report higher satisfaction and control in the learning experience. The central finding of Luo et. al.'s research indicates, flexibility to choose the best time table for a student's personal needs may lead to more success in the classroom, regardless of format.

The online format has also been found to benefit students who are already disciplined in scheduling and face-to-face social interactions (Carr, 2000; Luo et al., 2011). Many students who choose the online format over the face-to-face format do so because of strict schedules that they may not have the opportunity to take the course otherwise. Additionally, students in an online classroom have a better opportunity to grasp the entire courses requirements, and schedule accordingly. Carr came to this conclusion motioning that students in the online environment view the course as a total package, to plan their learning early and accordingly. This happens far less often in traditional face to face classes. (Carr, 2000).

Traditional vs. Online Outcomes

Wide varieties of research have been done to compare differences between communication courses in traditional face-to-face classrooms, and distance-learning classroom experiences. Clark and Jones (2001) examined the differences via a self-reported performance-based measure. The longitudinal study tested student's communication apprehension (CA) and self-perception of public speaking. Included, were students in the traditional classroom and distance-learning classroom. Results showed no difference in course selection due to CA or self-perception of public speaking. Reports also showed no distinct difference in public speaking ability after the course was completed. The only notable difference was course preferences and external reasons such as distance, work-hours, and convenience.

However, it would be a mistake to take results such as those of Clark and Jones (2001), and consider the two class formats the same experience. Public speaking courses are unique and attempt to teach communication outcomes (Gaffney & Kercsmar, 2016), as one might expect if comparing a public speaking course to an introductory statistics class. Contrary to Russle's (1999) no significant difference phenomena (students will perform just as well if technology is properly incorporated into the classroom), the notion has been challenged by researchers in the past. Gaffney and Kercsmar (2016) challenge this notion, stating: "As teachers, we have

anecdotal evidence that changing the structure of a course to introduce technology can make a difference although such differences are often nuanced" (p. 324).

No Significant Difference

Russell's (1999) significant difference hypothesis is based on a bibliographical review of 355 studies which brought Russell to the conclusion that no significant difference will exist in final grade outcomes between traditional and technology aided courses (Fendler, Raff & Shirkhande, 2018). Russell's conclusion has prompted numerous studies attempting to refute and confirm he no significant difference hypothesis.

Rendler, Raff and Shirkhandle (2018) conducted a study challenging the no significant different pheonomena. From an approach examining individual differences between students including: learning style, GPA, gender, planned major, course load, collegiate experience, and risk preference. The results of the 500-student study supports no significant difference in the aggregate. Interesting findings exist however regarding the importance of individual student choice when taking either class format. The authors identified students who's anticipated grade was a full letter grade different than the earned grade. These students were identified as 'jumpers' (42% of students in study). The research suggested that those who fell into the classification of 'jumper' did so by partaking in the wrong class format.

Expanding on existing knowledge surrounding the online-learning environment, Nguyen (2015) considers contemporary research findings and suggests expanding research beyond the no significant difference phenomena. Nguyen notes positive relationships which exist in online and hybrid based classroom environments (improved test scores, student engagement, reduction of withdrawal and failure). More results noted point to null findings which promote and credit Russell's (1999) no significant difference. Regarding negative findings, even fewer studies exist, and most are a product of nuance. Nguyen continues to emphasize the "more research needed" conclusion; researchers should focus on the effectiveness of the online format. This could include: self-selection bias, blended instruction, active engagement with materials, formative assessment, varied materials, repeatable low-stake practice, collaborative learning communities, student maturity, independent learning skills, synchronous and asynchronous work, and student characteristics.

Instructional Communication

Instructional Communication is a focused area of study which aims to create a modern communication concept emphasizing the communication process, enhance skills to deal with communication issues, and to successfully use communication in various areas of life (Cerci, 2017). When examining education in the communication field, one might turn to the instruction communication pedagogy.

Within instructional communication, three domains of learning dominate research: cognitive, affective and behavioral (Lane, 2015). For sake of accuracy, the cognitive and affective domains have held the spotlight for much of the instructional communication research (Lane, 2015; Witt, 2015). Additionally, instructional communication research generally employs self-report measures, instead of performance-based measures. Advantages of this include easier data collection as well as broader application across multiple instructors. The self-report measure produces a better assessment of affect for the course material, than the learning itself (Lane, 2015). A report of a student's liking of the course content and instructor can be more accurate than a measurement of what the student learned.

Affective learning, as part of the affective domain has been conceptualized by Krathwohl, Bloom, and Misa (1964) as interests, attitudes, appreciations, values, and emotional set of biases toward course material. Additionally, a combination of Krathwoh et al., (1964), and others, led scholars Thweatt and Wrench (2015) to define affective learning as "an individual's positive disposition toward a particular subject matter, which changes an individual's operational framework and value system thus guiding decision making and behavioral choices in all aspects of life" (p. 498). These values of affect can then be operationalized toward communication practices suggested in the communication classroom (Myers & Goodboy, 2015). Furthermore, Gaffney & Kercsmar (2016) highlight that affective outcomes (behavioral choices), ultimately practice some of the main goals of education. This justifies the value of affective learning when attempting to measure classroom success.

Bolkan (2015) acknowledges shortcomings with affective learning measurements and suggest an emphasis on student's affective experiences. Experiences including liking, satisfaction, contentment, lack of boredom, amusement, and enjoyment. These factors accurately reflect Pilotti et al.'s, (2017) notion regarding classroom culture and climate which can be influenced by the instructor's behavior, intersecting affective learning instructor behaviors.

Measuring affective learning has evolved from measure like those used today (McCroskey, 1994). McCroskey identified that many original measurements failed to focus on future behaviors and suffered from inappropriate factor analysis. The variables measured were factored as a single measurement, rather than separate entities. Instructional communication research identified that additional factors such as instructor communication behavior can influence affective learning. Communication courses intend to teach communication behaviors that students will engage in after the class. This intention is at the core of affective learning, where affect for the information learned is a predictor of future behavior. This led McCroskey to re-evaluate how affective learning can be measured. McCroskey asserted different aspects of affect should be considered: affect toward content, affect toward classes in content, affect toward instructor, and affect toward taking classes with instructor. The first two aspects of affect toward the course and class, are a measure for affective learning. However, the second two aspects of affect toward the instructor are important, but not a direct measure of affective learning (McCroskey, 1994). The measurement of affect toward instructor is an indicator of one influence promoting affective learning.

Following McCroskey's findings, instructor communication behavior has been found to be considerably important to fostering a sense of community and openness in the classroom (Woods, 2002). Woods' research exploring students in online classrooms has found that students who feel disconnected from the class, report feelings of: being overwhelmed, higher levels of procrastination, higher lack of participation in group discussion, and most notably a higher attrition toward the program. Woods stresses that a high degree of interaction between students and instructors is crucial to the online class experience. Woods' study examined email frequency between instructors and students. The results of the study produced no significant difference in student perception of online community, instructor relationship, or satisfaction with the online learning experience. However, the examination only considered emails, and Woods prompts further research into additional instructor communication behaviors, beyond those which were examined in this study.

Grawemeyer et al., (2017) researched affect in the online classroom to evaluate feedback, with consideration of student's affective states. Positive and negative affective states were analyzed to find data to determine what type of informative feedback should be provided, and how to best present such feedback. Students will often transition between affective states depending on the cognitive load resulting from the course work. The Grawemeyer et al., (2017) analysis used an intelligent feedback system to gather information in the digital classroom and enhance learning experiences and performance. The researchers used automated detection technology to analyze students gestures and speech. Results showed that students were primarily in positive states when the course and instructor feedback was tailored to the students affective

state. When the students were in positive affect conditions, the students were less likely to be off task, experience boredom, and produced higher test scores.

Instructor Variables

Instructor communication behavior is represented by several constructs. Baker (2001) identified immediacy and cohesiveness to maintain a positive relationship with affective learning. Immediacy behaviors are those which create a liking between individuals, and positive sensory involvement (Avtgis, Infante & Rancer, 2010). Cohesiveness involves communication behaviors which promote a sense of unity in a group, where the individuals operate as one unit. Instructor immediacy was found to be a strong predictor of affective learning, which led Baker (2001) to emphasize the importance of instructor behavior in the online-classroom.

Immediacy

Immediacy in the traditional classroom setting has been linked to increased student participation and the number of students who participate (Friedman & Roberts, 2013). Specific behaviors of immediacy referenced in the study include asking for opinion, warmth (use of humor and welcoming body language) and student call-outs. Each factor demonstrated abilities to encourage, connect, comfort, and increase opportunity for students in the traditional classroom.

Non-verbal immediacy behaviors have also been examined in relation to student affective learning. Martin and Mottet (2011) examined instructor nonverbal immediacy behaviors and identified a positive impact on students affective learning outcomes. The researchers conducted an examination of ninth grader writing conferences, or student-instructor discussion regarding

writing. Writing conferences were identified by the researchers, due to the teaching style's ability to establish good rapport between the student and instructor. The close relationship was enhanced by nonverbal immediacy behaviors such as smiling, leaning closer, and pleasant tone. The student participants in the research were found to have overwhelming affect for the instructor, writing conference, and material learned.

Teaching assistant's immediacy was measured in lecture and self-contained instructional class settings by LeFebvre and Allen (2014). The study consisted of a questionnaire given to students which examined teacher immediacy behavior and frequency. The students responded to a questionnaire to rate the teaching assistant's immediacy behaviors and followed up with a self-report measurement of the students affective learning outcomes. The results found no significant difference in immediacy when comparing the two course structures. The immediacy frequency and behavior did influence the teacher-student relationship in both setting however. The data also failed to produce a significant difference in affective learning outcomes when comparing the two course structures as well. The results of LeFebvre and Allen (2014) emphasize the importance of instructor immediacy behaviors, universally within instructional communication. The results also emphasize that all students who reported high levels of immediate behavior demonstrated higher affective learning, including: Recall of material, affect for subject, enrollment in similar courses, institutional integration, and degree completion.

Immediacy has been identified to enhance overall learning, beyond the single variable of affective learning (Baker, 2010). In the online classroom, Baker sought to examine instructor immediacy and presence in the online learning environment. This research also explored whether

variables such as gender, class and course type played a role in ability to identify instructor immediacy. The study identified a positive correlation between instructor immediacy and presence. The research however was not able to identify instructor immediacy in the online classroom as a single predictor of student affective learning. Baker notions that this could be a result of the differences between an online and a face to face learning environment. In other words, it could be harder for an instructor to convey immediacy without enhancing nonverbal cues at the instructor's disposal. The research also identified that students in asynchronous online classes reported lower perceptions of instructor immediacy than those in synchronous classes.

Measuring verbal immediacy in the online setting was done by Baker (2010) in a study examining instructor immediacy and presence in the online classroom. The examination attempted to identify a relationship to affective learning, cognition and motivation. Results demonstrated that immediacy in the online classroom alone was not a statistically significant predictor of affective learning, motivation and cognition. In measurement, Baker used Gorham's 1988 verbal immediacy scale, however was successfully able to operationalize the scale for usage in the online environment.

Clarity

Another teacher behavior is clarity, the process of communication where meanings are negotiated (Bolkan, Goodboy, Mazer, Myers & Titsworth, 2015). Incorporating much more than the process of sending the message. Specific characteristics of clarity have been expressed by Civikly (1992) including but not limited to: Question-posing, clarifying a message, coaching, redundancy, expressiveness, task structuring and information encoding. Clarity has been

observed and measured for its relationship to student affect and student learning. Findings are consistent that positive relationships exist between instructor clarity and student's affective learning. Further connections to affective learning can be demonstrated with Bolkan's (2016) findings, which indicate that instructor clarity decreases a student's cognitive load when processing a message, reducing receiver apprehension. Reduced receiver apprehension can increase a student's ability to process information in deep and meaningful ways.

Similar results have been discovered by Sidelinger and McCroskey (1997) in a study to identify relationships regarding instructor clarity and perceived immediacy, as well as affective learning outcomes. The study's findings highlighted the importance of an instructor's written and oral clarity. The clarity of the instructor had a positive relationship with the students affect toward course materials, which promotes students to continue behaviors learned outside of the classroom. Furthermore, a positive relationship was identified between instructor clarity and student's affect toward the instructor, which is positively correlated with the student's likeliness to take more courses with the specific instructor.

Further research suggesting the impact of clarity on affective learning is evident in Comadena, Hunt and Simonds (2007) findings. In a study to better understand immediacy and clarity effects on student motivation and affective learning, the researched posed hypothetical teachers to the research participants. The student's then responded to Likert-type questions to assess attitudes toward the hypothetical situations. Amongst many findings, the researchers were again, accurately able to identify a connection between instructor immediacy, clarity and

affective learning scores in the students. These results were however, marginally effective, meaning that higher scored did not indicate higher results, rather a correlation between the two.

Credability

In addition to the discussion on instructor clarity, instructor credibility has been identified to be a positive predictor or affective learning (Zhang, 2011). In the Chinese classroom, credibility was found to have the strongest impact on students affective learning, followed by immediacy. In part, Zhang discusses this as a part of the Chinese culture and power difference in the classroom. However, despite differences in culture, these findings provide information for enhancing the learning of students in both the United States and Chinese schools. The last important finding from this research was that instructor credibility can be a mediator of the effects of clarity and immediacy in the classroom.

Authenticity

The concept of authenticity is another variable which is significant for this research but is very abstract in nature. Instructor authenticity has been conceptualized and theorized in many ways, Kang (2013) discusses the variable in three dimensions: Bringing whole self, relationship, and integrity/morality. The authentic teacher can integrate themselves into the content being taught, the students, and the learning environment. Although the research by Kang (2013) was regarding a Christian focused college education, the core concept of the study involves an

authentic connection between the topic, and the instructor. Research shows that a sense of authenticity has positive effects on perceived relationships between parties, which can result in effective, genuine and open communication.

Further research by Johnson and Labelle (2017) also examined teacher authenticity, and the effects of the behavior on students. The goal of Johnson and Labelle was to determine whether students could distinguish teacher behaviors as either authentic or inauthentic. This research discovered that displays of teacher behavior such as immediacy and self-disclosure demonstrated acts of authenticity. The research also indicated that student perceived acts of authenticity were done out of concern and care. This indicates that students felt as if they were valued in the learning process. Although this work focused on the outcomes of authentic behavior, rather than inauthentic, results suggest that authentic behaviors will effect student's attitude toward the teacher and the course.

The authentic learning experience as described by Gaffney and Kercsmar (2016) gives students the opportunity to integrate individual experiences and prior knowledge into the course work. This is key to students developing and integrating their own identities, emphasizing an affective learning outcome. Continuing this notion, Cranton and Caruseta (2004) through interview and observation type research found that instructors who have a good understanding of herself or himself were more likely to demonstrate authentic behaviors in the classroom. This included articulating values, demonstrating congruence between values and actions, being genuine, and bringing his or her authentic self to the classroom. Cranton and Caruseta continue

to hypothesize that authenticity is a variable which develops, and continues though the course of a teaching career, and is subject to change.

Affinity-seeking

The teacher-student relationship is also influenced by affinity-seeking behaviors. Affinity-seeking is conceptualized as behaviors which aim to gain the approval of others (Bell & Daly, 1988). Initial testing of affinity-seeking by Bell and Daly found that those who engaged in affinity-seeking behaviors perceived to be more likable, socially successful, and satisfied with their lives.

Research (Myers, 1995; Myers 2003) indicates that teachers who engage in affinity-seeking strategies create a more positive climate in the classroom, according to students (Myers, 1995). Positive classroom climate has been associated with supporting, encouraging and valuing classroom interactions. Similarly, Myers (2003) examined instructor usage of affinity-seeking behaviors in the classroom. This examination compared affinity-seeking behaviors and teacher verbal aggressiveness in the classroom. Results indicated a negative relationship between affinity-seeking behaviors and perceived verbal aggressiveness. The results continue to note that higher usage of affinity-seeking strategies is likely to be perceived as lacking verbal aggression. Lacking verbal aggression and a positive classroom climate both promote student affect for instructor and course material.

Power

Lastly, the instructor's use of power in the classroom has direct influence on whether the instructor-student communication is effective or ineffective (McCroskey & Richmond, 1983).

McCroskey and Richmond discuss that power is an individual's potential to influence another's behaviors. With consideration to French and Raven's (1968) bases of power (coercive, reward, legitimate, referent, and expert), McCroskey and Richmond note that different bases of power associate differently with student-teacher perceptions of power. Furthermore, additional research on the topic has identified that specific uses of power by the instructor (reward, expert, and referent) can promote students to communicate for relational, functional and participatory motives (Bolkan & Goodboy, 2011). Bearing in mind that other bases of power alone, and in combination with others, could produce negative communication behaviors from students. The positive and negative results of this research demonstrate the importance of perceived instructor power on communication in the classroom.

Rationale

McCroskey (1994) proposed that instructor evaluation (affect toward instructor) is important in a measurement of affective learning. The literature reviewed discusses the impact of instructor immediacy, clarity, cohesiveness, affinity-seeking, authenticity, power and credibility on student's affective learning. These core instructor behaviors can change communication interactions within the classroom. Results of the research cited in the literature support

McCroskey's claim that instructor behavior should not be ignored when measuring affective learning.

The literature shows findings related to teacher behaviors in the classroom, and the results can be generalized to many learning experiences. However, this research aims to challenge Russle's (1999) no significant difference phenomena by means of assessing the student's perception of instructor behavior. Research on instructor immediacy behaviors in the classroom have been found to increase participation, encourage students, enhance recall, predict degree completion, benefit cognition, motive, increase affect for instructor, increase affect for subject, and affective learning (Baker, 2010; Friedman & Roberts, 2013; Gorham, 1988; Lefebvre & Allen, 2014; Martin & Motet, 2011). However, these research efforts did not examine student perception of instructor immediacy behaviors in the online setting compared to those in the face to face setting. To gather information in comparison of student perceptions research question one asks:

R1: Are students reported perceptions of instructor verbal immediacy different in the online setting than in the face to face setting?

Similar to research question one, this study continues to assess the instructor behavior of clarity in a comparison between the different classroom formats. Clarity has been found to decrease student's cognitive load, reduce receiver apprehension, increase motivation, and predict affect for instructor, affect for materials, and affective learning (Bolkan, 2016; Bolkan, Goodboy, Mazer, Myers & Titsworth, 2015; Civikly, 1992; Comadena, Hunt & Simonds, 2007; Sidelinger & McCroskey, 1997). The research cited examined clarity for the relationship with affective

learning outcomes and other positive student behavioral outcomes. The research does not provide information regarding student's ability to recognize instructor behaviors of clarity. To broaden the depth of this research, research question to asks:

R2: Are students reported perceptions of instructor clarity different in the online setting than in the face to face setting?

Authenticity is another variable discussed and researched which is known to influence students learning experience. Instructors who demonstrate authentic behaviors generate positive relationships with students, make the student feel valued in the learning process, promote students incorporating individualism into the classroom, and influence affect toward instructor and course (Cranton & Caruseta, 2004; Gaffney & Kercsmar, 2016; Johnson & Labelle, 2017; Kang, 2013). Students ability to identify authentic and inauthentic behaviors was examined by Johnson and Labelle (2017), but in an observer style study in the face to face classroom. Given the learning outcomes associated with authenticity, and no research which compares students ability to recognize the behavior in the online setting compared to the face to face setting, research question three states:

R3: Are students reported perceptions of instructor authenticity different in the online setting than in the face to face setting?

Lastly, the central theme of this study is assessing affective learning in the classroom. The research presented suggests that instructor behaviors of immediacy, clarity and authenticity in the classroom will promote affective learning outcomes for students. McCroskey (1994) claimed that instructor behavior should not be ignored in the classroom. Considering the research

presented, a lack of student's ability to recognize instructor behaviors which are known to influence affective learning, may have negative effects on affective learning outcomes. While a comparison of student's ability to recognize instructor behaviors of immediacy, clarity and authenticity is being addressed, an assessment of students affective learning is also worth attention. Affect toward content, affect toward class in context, affect toward instructor, and affect toward taking classes with instructor can be affected by student's ability to recognize immediacy, clarity, and authenticity.

If a difference exists in student's ability to recognize the instructor behaviors of immediacy, clarity, and authenticity, the difference may influence affective learning outcomes when comparing the online and face to face classes. To assess if a difference does exist, the research asks:

RQ4: Does a difference exist in students' affective learning outcomes in a fully online classroom setting compared to a traditional classroom setting?

Methods

To investigate differences between online and traditional classroom settings, this study assessed students in both class structures. The two class structures will be from various disciplines. Participants were recruited from various online and face to face courses.

Participants

The participants for this study were 298 undergraduate students from the United States of America. All participants were currently or previously enrolled in a course, either face to face or fully online. Participation was on a voluntary basis, and those who participated could opt-out at any time during the questionnaire. All participants will be over the age of 18 years old.

Procedure

After obtaining IRB approval, data collection promptly began. Administration of the questionnaire was done electronically to keep the evaluator behaviors consistent between the two course structures. Participants were asked to report perceptions of current or most recent instructor, and whether the instructor teaches an online or face to face course. Individual instructors will not be identified.

Instrumentation

The dependent variables are student perceptions of immediacy, affective learning, clarity, and authenticity. The independent variables will be the course classification (face to face or online). The variables tested will be immediacy, clarity, and authenticity; Specifically, student's ability to recognize instructor communication behaviors of immediacy, clarity and authenticity.

Affective Learning

Affective learning will be measured with McCroskey's (1994) assessment of affect instrument. The questionnaire features 18 items on a 7-point differential scale. The questionnaire measures affect toward content (e.g., I feel the class' content is "bad" vs. "good"), affect toward classes in context (e.g., likelihood of taking future classes is "unlikely" vs. "likely"), affect

toward instructor (e.g., The instructor I have in the class is "valuable" vs. "worthless"), and affect toward taking classes with this instructor (e.g., likelihood of taking future courses with teacher "possible" vs. "impossible"). Alpha reliability reported by McCroskey for the individual scales respectively are Affect for content (a = .85), affect toward classes in context (a = .90), affect toward instructor (a = .90), and affect toward taking classes with this instructor (a = .90). Both 8 item measurements of affective learning and instructor evaluation have been tested at .90 and above.

Immediacy

Immediacy will be measured using Gorham's (1988) verbal immediacy scale. The verbal immediacy scale consists of 17 items rated on a frequency scale. The 20 items are verbal behaviors which are scored on a range of 0 (never) to 4 (very often). Split-half reliability from Gorham's initial use of the scale was .94. Alpha reliability of the measure ranged from (a = .84) to (a = .90) in subsequent usage by Baker (2004). Items on the scale will be re-purposed to remain consistent and equally applicable to online and traditional classroom formats.

Clarity

Instructor clarity will be measured using the teacher clarity short inventory (Chesebro & McCroskey, 1998). The scale features 10 Likert type items, asking questions such as "my teacher's objectives for the course are clear." Responses range from (5) *strongly agree* to (1) *strongly disagree.* Initial alpha reliability from Chesebro & McCroskey scored .92.

Authenticity

Authenticity is going to be measure using a perceived authenticity scale (Hickson, McCroskey & Powell, 2015). The scale reports items identified by the researchers to measure perceptions of authenticity. Ten items are on the scale including: *Genuine, fake, sincere, sneaky fictitious, legitimate* and so on. Each item is rated on a five-point Likert scale ranging from 1(strongly agree) to 5(strongly disagree). Initial reliability test by Hickson, McCroskey and Powell (2015) estimated the scale's reliability high at .85.

Results

RQ1

Immediacy

Figure I

Descriptive for immediacy One-Way ANOVA

Immediacy Group		*n*	*M*	*SD*
	1	155	53.00	11.69193
	2	120	56.5833	8.90244
Total		275	54.5636	10.690244

ANOVA

Immediacy scores

	SS	*df*	*MS*	*F*	*p*
Between Groups	868.470	1	868.470	7.778	.006
Within Groups	30483.167	273	111.660		
Total	31351.636	274			

The Verbal Immediacy Scale (Gorham, 1988) contained a composite immediacy score calculated by summing the scores of the 17 item scale (including reverse coding on two questions). A one-way ANOVA was calculated using the two class formats as the independent variable, and Gorham's Verbal Immediacy scale as the dependent variable. There was a significant difference noted between group 1 (online) and 2 (face-to-face) at the $p<.05$ level for the two conditions [$F(868.470, 30483.167) = 7.778$, $p = 0.006$]. Post hoc comparisons using the LSD test indicated that the mean score for group 1 ($M = 53.000$, $SD = 11.69193$) was significantly different than the immediacy ratings for group 2 ($M = 56.5833$, $SD = 8.90244$). Taken together, these results suggest that students in the online classroom format have different perceptions of instructor verbal immediacy than those in group 2, supporting the research question.

RQ2

Clarity

Figure II

Descriptive for Clarity One-Way ANOVA

Clarity Group		*n*	*M*	*SD*
	1	163	37.6319	7.63112
	2	124	39.5887	6.24697
Total		287	38.4774	7.12123

ANOVA

Clarity scores

	SS	*df*	*MS*	*F*	*p*
Between Groups	269.664	1	269.664	5.399	.021
Within Groups	14233.938	285	49.944		
Total	14503.603	286			

Clarity was calculated using the teacher clarity short form inventory (Chesebro & McCroskey, 1988). A one-way ANOVA was calculated using the two class formats as the independent variable, and the teacher clarity short form inventory as the dependent variable. There was a significant difference noted between group 1 (online) and 2 (face-to-face) at the $p<.05$ level for the two conditions [$F(296.664, 14233.938) = 5.399$ $p = 0.021$]. Post hoc comparisons using the LSD test indicated that the mean score for group 1 ($M = 37.6319$, $SD = 7.63112$) was significantly different than the immediacy ratings for group 2 ($M = 39.5887$, $SD = 6.24697$). Taken together, these results suggest that students in the online classroom format have different perceptions of instructor clarity than those in group 2.

RQ3

Authenticity

Figure III

Descriptive for Authenticity One-Way ANOVA

Authenticity Group		*n*	*M*	*SD*
	1	136	31.4191	5.25294
	2	111	30.4234	4.10886
Total		247	30.9717	4.78939

ANOVA

Authenticity scores

	SS	*df*	*MS*	*F*	*p*
Between Groups	60.592	1	60.592	2.659	.104
Within Groups	5582.209	245	22.785		
Total	5642.802	246			

Authenticity was calculated using the perceived authenticity scale (Hickson, McCroskey & Powell, 2015). A one-way ANOVA was calculated using the two class formats as the independent variable, and the perceived authenticity scale as the dependent variable. There was no significant difference noted between group 1 (online) and 2 (face-to-face) at the $p<.05$ level for the two conditions [F(60.592, 5582.209) = 2.659 p = 0..104]. Post hoc comparisons were not calculated due to the results providing no significant difference.

RQ 4

Affective Learning

Figure IV

Descriptive for Authenticity Measure

Affect Group		*n*	*M*	*SD*
Affect Content	1	165	11.2303	2.87255
	2	125	11.0240	2.71039
Total		290	11.1414	2.80089
Affect Area	1	165	11.2000	2.81373
	2	122	10.6147	2.43068
Total		287	10.9512	2.66899
Affect Instructor	1	168	11.1845	2.72192
	2	122	10.7295	2.40879
Total		290	10.9931	2.60023
Affect Future	1	169	2.88145	2.88145
	2	123	2.57835	2.57835
Total		292	2.76025	2.76025

ANOVA

Affect Group		*SS*	*df*	*MS*	*F*	*P*
Affect Content	between	3.027	1	3.027	.385	.535
	within	2264.176	288	7.862		
	Total	2267.203	289			
Affect Area	between	24.024	1	24.024	3.401	.066
	within	2013.293	288	7.064		
	total	2037.317	289			
Affect Instruct.	between	14.633	1	14.633	2.173	.142

	within	1939.354	288	6.734		
	total	14.633	289			
Affect Future	between	11.219	1	868.470	7.778	.006
	within	2205.905	285	111.660		
	total	2217.123	286			

Affect was calculated using McCroskey's (1994) assessment of affect instrument. A one-way ANOVA was calculated using the two class formats as the independent variable, and the assessment of affect instrument as the dependent variable. In instrument contains 4 separate tests including affect of content, affect toward classes in context, affect toward instructor, and affect toward taking future classes with instructor. There was no significant difference noted between group 1 (online) and 2 (face-to-face) at the $p<.05$ level for the two conditions in any of the following tests: affect toward content [$F(3.027, 2264.176) = .385$ $p = 0.535$], affect toward context [$F(24.024, 2013.293) = 3.401$ $p = 0.066$], affect toward instructor [$F(14.633, 1939.354) = 2.173$ $p = 0.142$], affect toward taking future courses with instructor [$F(11.219, 2205.905) = 1.475$ $p = 0.142$]. Post hoc comparisons were not calculated due to the results not providing significance.

Demographics

A series of demographic questions were identified in the initial One-way ANOVA analysis to contain statistically significant differences between group when compared to the instruments on the questionnaire. The demographic questions which identified statistically significant are "Which gender do you identify with?", "Which ethnicity do you consider

yourself?", and "Is this your first time taking an online class?". Following the initial ANOVA analysis, LSD and multiple comparisons post hoc analysis were computed.

Gender

Figure IV

Descriptive for Authenticity Measure

Affect Group		*n*	*M*	*SD*
Affect Content	1	165	11.2303	2.87255
	2	125	11.0240	2.71039
Total		290	11.1414	2.80089
Affect Area	1	165	11.2000	2.81373
	2	122	10.6147	2.43068
Total		287	10.9512	2.66899
Affect Instructor	1	168	11.1845	2.72192
	2	122	10.7295	2.40879
Total		290	10.9931	2.60023
Affect Future	1	169	2.88145	2.88145
	2	123	2.57835	2.57835
Total		292	2.76025	2.76025

Gender Groups are as follows: 1 (Male), 2 (Female).

ANOVA

Affect Group		*SS*	*df*	*MS*	*F*	*P*
Affect Content	between	3.027	1	3.027	.385	.535
	within	2264.176	288	7.862		
	total	2267.203	289			

Affect Area	between	24.024	1	24.024	3.401	.066
	within	2013.293	288	7.064		
	total	2037.317	289			
Affect Instruct.	between	14.633	1	14.633	2.173	.142
	within	1939.354	288	6.734		
	total	14.633	289			
Affect Future	between	11.219	1	868.470	7.778	.006
	within	2205.905	285	111.660		
	total	2217.123	286			

Gender was analyzed as an independent variable, and the perceived authenticity scale as the dependent variable. There was a significant difference noted between group 1 (male) and 2 (female) at the $p<.05$ level for the two conditions [$F(40.403, 1312.846) = 5.016$ $p = 0.026$] and the affect toward content measure. The test indicated that the mean score for group 1 (M =11.4286, SD = 2.93194) was significantly different than the affect ratings for group 2 (M = 10.5091, SD = 6.24697).

In the affect for instructor scale there was a significant difference noted between group 1 (male) and 2 (female) at the $p<.05$ level for the two conditions [$F(32.542, 1204.737) = 4.484$ $p = .036$]. The test indicated that the mean score for group 1 (M = 11.1449, SD = 2.50456) was significantly different than the affect ratings for group 2 (M = 10.7295, SD = 2.40879).

In the affect for instructor scale there was a significant difference noted between group 1 (male) and 2 (female) at the $p<.05$ level for the two conditions [$F(32.542, 1204.737) = 4.484$ $p = .036$]. The test indicated that the mean score for group 1 ($M = 11.1449$, $SD = 2.50456$) was significantly different than the affect ratings for group 2 ($M = 10.7295$, $SD = 2.40879$).

Clarity was the last scale which a difference was noted in the post hoc analysis. A significant difference noted between group 1 (male) and 2 (female) at the $p<.05$ level for the two conditions [$F(315.945, 1374.778) = 2.440$ $p = .120$]. The test indicated that the mean score for group 1 ($M = 39.000$, $SD = 6.75145$) was significantly different than the affect ratings for group 2 ($M = 39.5887$, $SD = 6.24697$).

Figure VI
Descriptive for Ethnicity ANOVA

Ethnicity

		n	*M*	*SD*
Authenticity	1	10	34.1000	7.12507
	2	80	33.5500	4.87281
	3	13	31.0000	3.76386
	4	15	30.0667	3.93640
	5	124	29.2419	3.84955
	6	6	29.6667	4.03320
	Total	248	30.9798	4.78142
AffectConten	1	10	11.5000	4.11636
	2	91	11.7253	3.19397
	3	18	11.3333	2.80755
	4	17	11.2941	3.40523

	5	149	10.7517	2.41030
	6	7	12.0000	2.51661
	Total	292	11.1781	2.84100
AffectArea	1	10	12.1000	3.34830
	2	90	11.3778	3.14295
	3	18	12.4444	2.89466
	4	17	11.0588	3.00979
	5	147	10.3741	2.18090
	6	7	12.2857	2.36039
	Total	289	10.9619	2.71734
AffectInstructor	1	10	12.2000	3.01109
	2	92	11.4022	2.73383
	3	19	11.7368	3.54091
	4	16	10.5625	2.44864
	5	148	10.6419	2.40184
	6	7	12.1429	2.67261
	Total	292	11.0377	2.64678
AffectFuture	1	10	11.8000	3.35989
	2	94	11.5213	2.81596
	3	18	11.8333	3.48526
	4	17	11.0000	3.37268
	5	149	10.4832	2.54581
	6	6	11.3333	2.65832
	Total	294	10.9898	2.80600
Clarity	1	9	35.1111	10.84487
	2	93	36.5376	6.07303
	3	19	39.3684	7.84723
	4	17	40.6471	7.59886
	5	144	39.5208	7.16340
	6	7	37.5714	5.50325
	Total	289	38.4325	7.11877
Immediacy	1	9	52.5556	16.49326
	2	90	52.7667	11.64749
	3	18	53.0000	9.86378
	4	16	55.9375	8.94031
	5	139	55.5324	10.18688
	6	5	57.0000	8.57321
	Total	277	54.4224	10.81357

Ethnicity groups are as follows: 1 (American Indian or Alaskan Native), 2 (Asian / Pacific Islander), 3 (Black or African American), 4 (Hispanic American), 5 (White / Caucasian), 6 (other).

ANOVA

		SS	*df*	*M*	*F*	*P*
Authenticity	Between	1023.191	5	204.638	10.711	.000
	Within	4623.709	242	19.106		
	Total	5646.899	247			
AffectConten	Between	60.766	5	12.153	1.519	.184
	Within	2287.973	286	8.000		
	Total	2348.740	291			
AffectArea	Between	131.290	5	26.258	3.724	.003
	Within	1995.292	283	7.051		
	Total	2126.581	288			
AffectInstructor	Between	70.367	5	14.073	2.045	.072
	Within	1968.219	286	6.882		
	Total	2038.586	291			
AffectFuture	Between	84.871	5	16.974	2.200	.054
	Within	2222.099	288	7.716		
	Total	2306.969	293			
Clarity	Between	708.972	5	141.794	2.890	.015
	Within	13885.962	283	49.067		
	Total	14594.934	288			
Immediacy	Between	555.717	5	111.143	.950	.449
	Within	31717.864	271	117.040		
	Total	32273.581	276			

Ethnicity was analyzed as an independent variable, and the perceived clarity as the dependent variable. There was a significant difference noted between group 3 (African American or Black) and group 5 (White / Caucasian) at the $p<.05$ level for the two conditions [$F(708.972, 13885.962) = 2.890$ $p = 0.015$] and the clarity measure. The Post HOC multiple comparisons test indicated a significant difference between groups 3 and 5 (M =.15241, SD = 1.70974) regarding reported clarity scores.

First time taking an online class

Figure VII

Descriptive for first time taking an online course ANOVA

		n	*M*	*SD*
Authenticity	1	83	33.3253	5.19171
	2	117	30.1966	3.91777
	3	47	28.8511	4.43787
	Total	247	30.9919	4.78734
AffectConten	1	95	11.7895	3.25803
	2	141	10.8014	2.66517
	3	55	11.0364	2.32509
	Total	291	11.1684	2.84105
AffectArea	1	98	11.7449	3.26907
	2	136	10.4926	2.28034
	3	54	10.7407	2.35673
	Total	288	10.9653	2.72148
AffectInstructor	1	99	11.6768	2.93059
	2	139	10.6763	2.43827
	3	53	10.7736	2.45452
	Total	291	11.0344	2.65074
AffectFuture	1	100	11.8100	3.02079
	2	139	10.4245	2.59871
	3	54	10.9259	2.60516
	Total	293	10.9898	2.81080
Clarity	1	98	36.0204	7.00218
	2	138	39.6377	6.81876
	3	52	39.8462	7.11636
	Total	288	38.4444	7.12827
Immediacy	1	91	52.0220	12.49798
	2	133	54.8571	9.49333
	3	52	57.3077	10.12188
	Total	276	54.3841	10.81435

Group identification is as follows: 1 (Yes), 2 (No), 3 (N/A).

		SS	*df*	*M*	*F*	*P*
Authenticity	Between	741.331	2	370.665	18.470	.000
	Within	4896.653	244	20.068		
	Total	5637.984	246			
AffectConten	Between	56.593	2	28.296	3.568	.029
	Within	2284.156	288	7.931		
	Total	2340.749	290			
AffectArea	Between	92.667	2	46.334	6.495	.002
	Within	2032.985	285	7.133		
	Total	2125.653	287			
AffectInstructor	Between	62.285	2	31.143	4.540	.011
	Within	1975.371	288	6.859		
	Total	2037.656	290			
AffectFuture	Between	111.919	2	55.959	7.393	.001
	Within	2195.051	290	7.569		
	Total	2306.969	292			
Clarity	Between	874.499	2	437.249	9.090	.000
	Within	13708.612	285	48.100		
	Total	14583.111	287			
Immediacy	Between	981.971	2	490.986	4.299	.015
	Within	31179.319	273	114.210		
	Total	32161.290	275			

First time taking an online class was analyzed as an independent variable compared to the instruments on the questionnaire. A significant difference was noted between at the $p<.05$ level in the affect for instructor measure [$F(62.285, 1975.371) = 4.540$ $p = 0.011$]. The Post HOC multiple comparisons test indicated that a significant difference existed between group (M

=11.4286, SD = 2.93194) was significantly different than the affect ratings for group 2 (M = 10.5091, SD = 6.24697).

Discussion

RQ1

Research question one intended to identify if students in the online classroom perceive the instructor behavior of verbal immediacy differently than those in the face to face classroom. This was done by using the verbal immediacy measure on students in the face to face classroom and online classroom. The results found a significant difference in the students rating of instructor immediacy behavior. Those in the face to face classroom found instructor more verbal immediate than those in the online classroom setting.

Research question one specifically targeted the student perception of immediate behaviors. A difference was discovered, therefore allowing for the insinuation of different perceptions. While we cannot explicitly say that students perceive the instructor's behavior differently, we were able as researchers to challenge Russell (1999) and discover a difference in reported verbal immediacy of instructors. While the instrument was adjusted to remain applicable to both formats as done by Baker, 2001, the students in the two formats experienced the instructors verbal immediacy in different ways.

Verbal immediacy was researched as a separate variable due to the relevance of immediacy, as well as to lay a foundation for accuracy regarding the rest of the instruments.

Verbal immediacy at face value should measure differently in the face to face and computer mediated settings. The survey was adjusted, and language was changed following Baker (2001), yet provided different results than those of Baker.

RQ 2

Research question two examined more variables than immediacy to discover if other differences exist in the student perception of instructor communication behavior. Comparing the two class contexts, a second significant difference was discovered regarding student perceptions of instructor behavior. The difference was in student reports of perceived instructor clarity. Results demonstrated that individuals in the online classroom reported lower levels of clarity than individuals in the face to face classroom. The teacher clarity short form inventory (Chesebro & McCroskey, 1998) was designed to assess student perceptions of instructor clarity. Several explanations for this difference may explain this result, one may be connected to the differentiating perception of instructor immediacy. Another explanation could be regarding time differences in feedback and responses from instructor to student.

Results would suggest that the students responding from the online setting are not perceiving the communication behaviors associated with clarity as those in the face to face setting. Civikly (1992) described communications behaviors such as question-posing, clarifying a message, coaching, redundancy, expressiveness, and task structuring to be among the most important in the educational setting.

While many contemporary methods of researching online and face to face classrooms will point back to Russle (1999), this research attempted to identify differences from

the angle of instructor communication behavior. Rather than strictly comparing outcomes, students were asked to assess perceptions of instructor communication behaviors which are known to influence learning outcomes as noted in the literature review.

RQ3, RQ4

The identified differences were discovered in clarity and verbal immediacy. Students in the face to face classroom and online classroom did not differentiate in perceptions of affect and authenticity.

Interesting additional findings were also discovered when demographics were compared to the results of the survey instruments. When gender was examined as a variable, differences were discovered between men and women regarding affect toward class content. Men displayed higher levels of affect toward content than females did. Additionally, males displayed higher levels of affect for instructor as well when compared to females. When gender was compared in a one-way analysis to clarity. Females reported higher levels of clarity then males did.

Regarding differences noted in reported ethnicity, a significant difference was discovered in student perceptions of instructor clarity. Findings indicated that participants who identified as white / Caucasian reported higher levels of perceived clarity than black / African American individuals.

Limitations, future direction, empirical significance.

As mentioned in the introduction, the online class setting is here to stay. Due to expectations of students and profitability, the standard college or university must offer and be

proficient in the usage of online learning. It is this fact which should circumvent research that attempts to determine which format is more effective; that simply does not matter. Research to better understand the differences between the formats will allow educators to adapt and fulfill any shortcomings which may exist. An understanding that comparing online and face to face classrooms is an "apples to oranges" comparison, rather than a "apples to apples" comparison. The analysis presented in this research gathered data to understand how students perceive instructor communication behaviors. The report demonstrates shortcoming and areas of focus for future research and instructor course planning.

The first limitation of this research comes from the usage of Amazon Mechanical Turk to distribute the survey, at the cost of 8 cents per survey completed. Additionally, amongst the pool of surveyed individuals, there was no way to guarantee the respondents were students. Many of the respondents were answering based on recall of the last class they took, with variable lengths between classes. However, this survey was perception based so this factor may not have negatively influenced the results.

Future investigation into the student perception of instructor communication behavior would benefit from testing students taking courses with the same professor. If a similar instrument could be distributed to an instructor who is teaching online and face to face class, results could yield much more valuable information. Notably, if done through qualitative methods.

The additional findings regarding the demographic analysis displayed variables to be considered when working with students. The results on gender indicated that females perceived

higher levels of clarity than males in the online classroom. While males reported higher levels of affect toward class content and instructor. Previous research which has focused on male and female performance in the academic setting may not have taken perception of communication into account. As instructors, we can use this information to better cater to students of multiple genders.

The differences revealed when examining ethnicity displayed that those who identified as White or Caucasian perceived higher levels of instructor clarity than those who identified as Black or African American. This finding carries heavy implications regarding how higher education institutions and instructors practice cultural communication. Attention should be paid to minority students, and how they are learning in the college culture. Ethnic backgrounds often bring different cultural practices and norms which can inhibit one student from getting the same learning experience as another.

This research finds empirical significance in several ways, notably by challenging and demonstrating results contrary to Russel (1999). Additionally, this research purposed a new lens to examine online and face to face settings through. Rather than a direct comparison of end grade results and self-report measures, this research investigated student perceptions specifically. An argument could be made that regardless of how the instructor acts, student perception will still influence learning outcomes linked with the behaviors in question.

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