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Engagement in Cross-Cultural Large Lecture Classrooms: Using Top Hat Technology to Include Students in the Discussion

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A criticism of cross-cultural course requirements at the collegiate level is just how effective these courses are in promoting multiculturalism among students. Many of these courses are also taught in large lecture format, cultivating an environment in which students are passive receivers of information rather than active participants in open interactions with the instructor and their peers. Incorporating a student response system (SRS) into a cross-cultural large lecture course allows students to respond to questions anonymously while facilitating the active involvement and engagement that is necessary to facilitate student openness to adopting more pluralistic perspectives over the span of the course. This study addressed a gap in the literature by exploring (a) students' perceptions of SRS's anonymity, (b) whether SRS use impacts students' feelings of engagement with their peers and course content, and (c) whether SRS use contributes to students' achievement of course objectives. Results from a survey (n = 171) conducted in a large lecture diversity course that utilized an SRS provided initial support for the use of an SRS as a means of increasing engagement, eliciting honest responses on sensitive course content, and facilitating achievement of course objectives in large lecture diversity courses.

Keywords: pedagogy, student response systems (SRS), large-lecture, engagement, diversity

Introduction

A criticism of cross-cultural course requirements at the collegiate level is just how effective these courses are in promoting multiculturalism among students (Miller-Spillman, Michelman, & Huffman, 2012). An additional challenge is that many of these courses are often taught in a large lecture format, sometimes with hundreds of students (Holland, Schwartz-Shea, & Yim, 2013). Large lecture formats cultivate a classroom environment in which students are passive receivers of information rather than active participants in open interactions with the instructor and their peers (Mayer et al., 2009). This results in a missed opportunity for engagement and discussion among a diverse body of students which could facilitate the achievement of course

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objectives (e.g., adopting a multicultural worldview). What's more, a distinction exists in the classroom environment of cross-cultural courses in that active involvement by students is crucial for them to effectively retain knowledge (i.e., constructivist approach) and further, to internalize the learned information and employ it in shaping their worldview (Fox-Turnbull & Snape, 2011). Because cross-cultural courses typically encompass content that can be sensitive in nature (e.g., religion, race), facilitating meaningful student interaction can be even more of a challenge. Many courses that fulfill university cross-cultural requirements are housed in family and consumer sciences units. Therefore, these issues and how to mediate them are valuable areas of research exploration.

Clickers are a useful pedagogical tool in large lecture courses. Substantial developments in functionality have transformed simple clicker systems into web-based student response systems (SRS) that students can access from their own devices (i.e., mobile apps, tablets). Instructors can now immediately share anonymous student response data with their classes. This connectivity could be especially useful in cross-cultural large lecture courses, creating an opportunity to highlight the collective responses of the class without singling out individual students (Taylor, 2013). Furthermore, viewing the class's results allows students to observe the diverging viewpoints on cross-cultural issues within the classroom and can be supported by instruction from the professor that encourages students to reflect on and think critically about their positions on cross-cultural issues. Incorporating an SRS into a cross-cultural large lecture course could foster the active involvement and engagement necessary for students to be open to adopting more pluralistic perspectives over the span of the course.

A gap in the literature exists related to the SRS and its potential impact on students' learning experiences in cross-cultural large lecture courses. The purpose of this study was to address this gap by exploring (a) students' perceptions of the SRS's anonymity, (b) whether SRS use impacts students' feelings of engagement, and (c) whether SRS use contributes to students' achievement of course objectives (e.g., awareness, reflection, critical analysis, cross-cultural learning).

Literature Review

Challenges to Cross-Cultural Course Instruction Mitigated by SRS Use

Cross-cultural competency is now considered to be an invaluable student learning outcome in many university curricula and is further attenuated through cross-cultural course requirements at the university level. Development of this soft skill is aimed at preparing students for employment in diverse industries (e.g., textile and apparel) and for membership in a global society by encouraging them to adopt a "global mindset that encompasses multiple perspectives . . . [and to] consider issues from a cultural, social, political, environmental, and economic framework" (LeHew & Meyer, 2005, p. 292). A number of factors challenge diversity courses' efficacy in helping students achieve cross-cultural competency, many of which can be mitigated by the use of an SRS.

Student resentment. Students of all cultural backgrounds begin diversity classes with their own biases, values, and beliefs that can lead to a level of resistance when studying viewpoints differing from their own. Instructional management tools, such as participation and peer interaction, can help elicit a change in students' motivations to explore their own cultural awareness (Brown, 2004). The positive effect of classroom engagement on diversity learning is highly documented (e.g., Holland, 2006; Lee, Williams, & Kilaberia, 2012; LeHew & Meyer, 2005; Miller-Spillman, Jackson, & Huffman, 2006). Recent research also provides support for an SRS in cultivating the engagement that is necessary to achieve diversity course learning outcomes (Holland et al., 2013).

Teacher credibility and the open classroom approach. Instructors' pedagogical approaches can mitigate or facilitate student resentment in diversity courses. Brown (2004) stated that in order to be effectual leaders of diversity courses, instructors "must be multicultural and possess the skills to provide a classroom environment that adequately addresses student needs, validates diverse cultures, and advocates equitable access to educational opportunity" (p. 325). Thus, students' openness to diversity learning is contingent on the extent to which the instructor is perceived to have sufficient cross-cultural knowledge (i.e., teacher credibility) and presents the information in a manner that is fair and considerate of all students' beliefs. Teacher credibility has also been found to impact students' openness to exploring divisive issues in class (Holland, 2006; Holland et al., 2013).

Instructors must also cultivate an open and interactive classroom by "encouraging and respecting student opinions, rather than simply lecturing to students who have no opportunity to respond" (Holland et al., 2013, p. 275). An SRS can be an effective means for instructors to engage with students during lectures and can demonstrate to students that the instructor is interested in their opinions (Salemi, 2009). Students may also experience increased feelings of engagement with their peers when anonymous question response data are shared with the class (Holland et al., 2013). The ability to view SRS feedback in real-time also allows the instructor to immediately incorporate commentary on the response data into the lecture. For example, an instructor can adjust to the specificities of the class by addressing poll results that are surprising or unexpected and can probe more deeply into student viewpoints by deploying additional SRS questions on the topic of study (Holland et al., 2013).

Large lecture course format. Diversity courses at the university level are often taught as large lectures, creating additional barriers to cross-cultural learning when students can "acquiesce into a large tranquil sea of anonymity" (Taylor, 2013, para. 2). Disengagement has been attributed to decreased efforts by students to understand the content presented in the classroom, decreased course performance, and an inability to articulate learning outcomes when reflecting on their experience in the large lecture course (Mayer et al., 2009). Further, Holland (2006) suggests that the larger the class size, the more difficult it is for an instructor to cultivate and maintain an open classroom environment. Implementing an SRS in a large lecture course can enhance skill

development and content retention, improve attitudes toward the course format, and increase students' overall course satisfaction (Fullan, 2007; Trees & Jackson, 2007).

There are also many classroom management benefits associated with utilizing an SRS in a large lecture course. For example, instructors can easily track attendance, thereby increasing students' motivation to attend class (Sprague & Dahl, 2010). Students' pre-class preparation (e.g., readings) may also improve if the instructor uses an SRS for content polling (Beard, Morote, & Volcy, 2013). Content polling can also be used to informally evaluate students' retention of course concepts, allowing the instructor to identify topics that merit additional focus prior to formal assessment on an exam (Heaslip, Donovan, & Cullen, 2014). However, research suggests that using an SRS for opinion polling "is most pertinent to teaching a diversity course" (Holland et al., 2013, p. 276), and that efficacy of the SRS depends on how successfully the instructor uses the poll results to advance students' learning and understanding of cross-cultural issues (Salemi, 2009).

SRS anonymity. The anonymity of the SRS has received recent, albeit limited attention. Heaslip et al. (2014) found that students value the anonymity of the SRS when content polling is used because they are not exposed to the class when they log incorrect answers. Therefore, students do not risk embarrassment and are more willing to participate in the lectures (Heaslip et al., 2014). Sprague and Dahl (2010) found that in introductory courses, "the anonymity and security [that the SRS] provides students, makes it an excellent tool for challenging students with advanced material and concepts" (p. 101). Holland et al. (2013) explored the impact of the SRS's anonymity in a comparative case study on two collegiate-level diversity courses, yet findings were mixed. Some students (28%) valued the anonymity of the SRS when responding to sensitive or controversial questions, as they were able to avoid judgment or confrontation. However, other students (15%) criticized the anonymity of the SRS because they did not have to defend or explain their opinions. The authors concluded, "that the value of the anonymity feature is contested in the diversity setting" (Holland et al., 2013, p. 288) and called for additional research. The present study addresses this call by exploring the potential impact of an SRS's anonymity on students' learning experiences in cross-cultural large lecture courses.

Method

Research Setting and Description of the Technology

This study was conducted in a large lecture course at a university in the Midwestern United States that consisted of 225 students and represented diverse enrollment (e.g., major, year in school). The three-credit course, Introduction to Fashion and Culture, fulfills the university's cross-cultural requirement and is also a major requirement for students in the retail merchandising program. Course content included a focused exploration of the role of dress in shaping societal and cultural norms and was disseminated via two 75-minute class sessions per week over the 16-week spring semester. The course was held in a traditional lecture theater that

was equipped with Wi-Fi and instructional support technology (i.e., dual projection screens, audiovisual equipment). Instruction was primarily lecture-based with media content (e.g., video clips), instructor commentary, and the SRS supporting the PowerPoint presentations.

The instructor, a 36-year old Caucasian female, favored a pedagogical approach similar to Holland et al. (2013) which seeks to “avoid privileging one point of view, to encourage critical thinking and the development of authentic opinions, and, ultimately, to promote respect for the opinions of those with whom students disagree” (p. 279). The instructor introduced the SRS, Top Hat, on the first day of class and confirmed that students understood how to use the technology. Top Hat offers a classroom experience that is seamlessly integrated with students’ devices (i.e., laptops, tablets, cell phones, mobile apps). It was selected over other available SRS programs due to its wide use by course instructors at the university where the study was conducted and because Top Hat’s seamless integration was perceived to be convenient for students. That is, students do not typically forget their personal devices as they might forget to bring a clicker to class.

Top Hat was employed during each class meeting to take student attendance and deploy two to three questions on course topics that counted toward students’ class participation scores. The sociocultural scope of the course increased the likelihood that students would perceive questions related to many topic areas (e.g., race, gender and sexuality, social class, religion) as sensitive in nature and/or contentious. However, Top Hat allowed students to respond to questions anonymously and automatically recorded participation points. Individual student responses were visible to the instructor, but only the collective poll results were shared with the class and discussed in order to create “teachable moments.”

According to a suggestion by Holland et al. (2013), opinion polling was used most often as it is more appropriate to instruction in a diversity course than content polling. The following example demonstrates a typical opinion question posed by the instructor. In order to facilitate a lecture on cultural authentication, students were asked to respond to the following question: *Do you believe it is acceptable to adopt ethnic styles for fashion purposes?* The answer set included the following choices: (a) yes, (b) no, (c) unsure, and (d) depends on the ethnic style or item being adopted.

Background polling via the SRS was also utilized to explore students’ familiarity with and opinions about course topics, both before and after the lectures. This allowed the instructor to gauge any changes in students’ understanding and/or opinions that occurred as a result of course instruction. The following example demonstrates a typical “before and after” background question posed by the instructor.

In order to facilitate a lecture and informational video segment on the counterfeiting industry, students were asked to respond to a question (see Figure 1) about whether they would consider purchasing counterfeit merchandise. Following the lecture and video, students responded to the

question for a second time (see Figure 2). The reported change in students' inclination to purchase counterfeit merchandise likely occurred due to the increase in knowledge that resulted from the lecture and informational video.

Figure 1. Student Responses to a Top Hat Question Posed before Instructional Content was Disseminated

Respond to the following statement: I would consider purchasing counterfeit merchandise (i.e., handbags, perfume, electronics, footwear, watches, etc.) if I saw something I liked being sold on the street or in a street market.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
9%	11%	38%	32%	10%

N = 212

Figure 2. Student Responses to a Top Hat Question Posed after Instructional Content was Disseminated

After hearing today's lecture and seeing the video, respond to the following statement: I would consider purchasing counterfeit merchandise (i.e., handbags, perfume, electronics, footwear, watches, etc.) if I saw something I liked being sold on the street or in a street market.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
21%	30%	33%	14%	2%

N = 212

Sample and Data Collection

Students in the Introduction to Fashion and Culture course comprised the convenience sample for the study. Data collection occurred during the final week of the spring semester via an online survey (i.e., Qualtrics). Students accessed the survey through a link in an email that was sent out to the class by the researchers, one of whom was the course instructor. The survey landing page contained an IRB-approved explanation of the study indicating that participation was voluntary and responses were anonymous, that there were no points associated with completing the survey, and stated that students' submission of the completed survey implied their consent.

The survey instrument utilized both qualitative and quantitative items. Participants first responded to five open-ended questions that prompted them to write about their perceptions of classroom climate and the instructor's teaching style, the features of Top Hat (i.e., anonymous, engagement tool), and whether they believed that using Top Hat impacted their achievement of course learning objectives. The questions were developed according to recommendations for future research by Holland et al. (2013) in order to probe more deeply into student perceptions of SRS use in a diversity course.

Students then responded to ten demographic items and twelve 5-point Likert scale questions, ranging from 1 = *strongly disagree* to 5 = *strongly agree*. The two-part approach was employed to first allow students to convey their experiences with limited prompting from the questionnaire items (Holland et al., 2013). Although open-ended questions and well-designed closed-ended questions can produce the same results, open-ended questions can be especially beneficial for gleaning additional insight into nascent research areas (Schuman, 2008). Similar to Beard et al. (2013), “content validity was established by the subjective judgment of [two] expert reviewers who studied and utilized the SRS in the classroom” (p. 137). Because one of the researchers was also the instructor, data were not analyzed until after the culmination of the course.

Results and Discussion

Closed-Ended Questions

Data from the closed-ended questions were analyzed using the Statistical Package for the Social Sciences (SPSS) Version 22. Survey completion was voluntary, and 171 out of the 225 enrolled students (76%) responded. The sample was largely female ($n = 139$) and Caucasian ($n = 139$). Additional races reported by participants included African American ($n = 10$), Asian or Asian American ($n = 17$), and Mixed Race ($n = 2$). Three students ($n = 3$) identified as Hispanic or Latino. Many students ($n = 140$) also indicated that they were religious. There were 123 underclassmen and 48 upperclassmen in the sample with students' ages ranging from 18 ($n = 36$) to 24 ($n = 1$). In order to conduct statistical analysis using the Mann-Whitney test, respondents were grouped into two categories for race (i.e., Caucasian, non-Caucasian), religion (i.e., religious, not religious), and age (i.e., 18-20, 21-24). The sample included students in the retail merchandising major ($n = 28$) for whom the course filled a university and a program requirement but was widely represented ($n = 143$) by students from various majors across the university. The majority of students ($n = 154$) were born in the United States and cited English ($n = 154$) as their first language.

Closed-ended questions were divided into three categories: classroom engagement, anonymity, and cross-cultural learning outcomes (see Table 1). Survey results revealed that for the majority of students, the use of Top Hat increased engagement in the large lecture classroom. Many respondents agreed or strongly agreed that Top Hat was important to their level of engagement with course content (78.4%), using Top Hat increased their feelings of connectedness with other students in the class (67.2%), and they enjoyed viewing the class poll results (77.8%). Students also valued the anonymity feature of Top Hat when responding to questions of a personal or sensitive nature (i.e., religion, politics; 67.9%). Although students reported that Top Hat's anonymity compelled them to answer questions more honestly (88.8%), the lower percentage of agreement for increased comfort (54.9%) suggested there is still a level of discomfort associated with exploring sensitive or divisive cross-cultural issues, even when the mode of exploration is anonymous. Regarding cross-cultural learning outcomes, many participants agreed or strongly

agreed that viewing the poll results increased their awareness of the cultural diversity (67.8%) and diverging views (64.3%) within the class. Results also suggested that Top Hat use prompted students to reflect on (64.3%) and think critically (59.7%) about their positions on cross-cultural issues. Finally, many students indicated that engaging with the class through Top Hat (60.3%) and comparing their responses to those of their peers (59.7%) contributed to their cross-cultural learning in the Introduction to Fashion and Culture course.

Table 1. Student Perceptions of Top Hat Use and its Impact on Classroom Engagement, Anonymity, and Cross-Cultural Learning Outcomes

		Percentage				
		SD	D	N	A	SA
Classroom Engagement	1. Using Top Hat contributed to my level of engagement with the course content.	1.8	4.1	15.8	40.4	38.0
	2. Using Top Hat made me feel connected to my peers.	2.9	5.3	24.6	37.4	29.8
	3. I enjoyed viewing the reports of the class's Top Hat responses.	1.8	3.5	17.0	45.6	32.2
Anonymity	4. The anonymity of Top Hat is important to me when responding to questions of a personal/sensitive nature (i.e., religion, politics, etc.).	4.1	4.7	23.4	28.7	39.2
	5. I answer sensitive questions more honestly because Top Hat is anonymous.	1.2	0.0	9.9	36.8	52.0
	6. The anonymity of Top Hat makes me more comfortable answering sensitive questions.	6.4	16.4	22.2	25.1	29.8
Cross-Cultural Learning Outcomes	7. Using Top Hat increased my awareness of the cultural diversity of the class.	4.7	6.4	21.1	45.0	22.8
	8. Using Top Hat increased my awareness of the diverging viewpoints within the class.	3.5	5.8	26.3	41.5	22.8
	9. Top Hat prompted me to reflect on my position on cross-cultural issues.	4.1	7.6	24.0	42.7	21.6
	10. Top Hat prompted me to think critically about my position on cross-cultural issues.	4.1	6.4	29.8	39.2	20.5
	11. Engaging with the class through Top Hat contributed to my cross-cultural learning.	4.7	4.7	30.4	39.8	20.5
	12. Comparing my responses with the responses of my peers contributed to my cross-cultural learning.	4.1	4.7	31.6	39.8	19.9

Note: SD = Strongly Disagree; D = Disagree; N = Neither Agree Nor Disagree; A = Agree; SA = Strongly Agree.

Allen and Seaman (2007) suggest that the “analysis of Likert scalar data should not involve parametric statistics but should rely on the ordinal nature of the data” (para. 21). Further, the

nonparametric equivalent to the *t*-test, the Mann-Whitney *U*, is statistically more powerful than the *t*-test when the sample is not normally distributed (De Winter & Dodou, 2010). To that end, the Mann-Whitney *U* test was employed to compare differences in classroom engagement, anonymity, cross-cultural learning (i.e., ordinal variables) for the two values of each demographic (i.e., categorical, independent) variable. The Shapiro-Wilk Test of Normality was performed, and the results confirmed that groups significantly deviated from a normal distribution ($p < .05$), an assumption of the Mann-Whitney test (Field, 2000). The nonparametric test for homogeneity of variance was then conducted using rank scores for the sample and mean ranks for each group in order to calculate absolute deviation scores. Results indicated that the assumption of homogeneity of variance was retained ($p > .05$). Therefore, the distribution of scores for both groups of each independent variable is assumed to have the same shape, an assumption of the Mann-Whitney test (Field, 2000). The statistically significant results from the Mann-Whitney *U* analysis of the demographic variables are presented in Table 2.

With respect to gender, the Mann-Whitney *U* test indicated that females believed that engaging with the class through Top Hat contributed to their cross-cultural learning more so than males. Females also believed that Top Hat increased their awareness of the diverging viewpoints of the class more so than males. For the demographic variable, ethnicity, Caucasian respondents reported feeling more connected to their peers as a result of Top Hat use than non-Caucasian respondents. Caucasian respondents also valued Top Hat's anonymity when answering sensitive questions more so than non-Caucasian respondents. Caucasian respondents believed that engaging with the class through Top Hat contributed to their cross-cultural learning more so than non-Caucasian respondents. Finally, Caucasian respondents believed that comparing their responses with their peers' responses contributed to their cross-cultural learning more so than non-Caucasian respondents. Students whose first language was English valued Top Hat's anonymity when answering sensitive questions more than the English as a second language (ESL) students. Top Hat's anonymity also had more of an impact on the propensity to log honest answers for the native speakers than it did for the ESL students. Students whose first language was English believed that engaging with the class through Top Hat contributed to their cross-cultural learning more so than the ESL students. The Mann-Whitney test indicated that Top Hat's anonymity was more important when answering sensitive questions for students that were born in the U.S. than for students that were not born in the U.S. Students born in the U.S. also believed that Top Hat's anonymity impacted the likelihood that they would answer sensitive questions honestly more so than the non-U.S.-born students. Engaging with the class through Top Hat contributed to cross-cultural learning for U.S.-born students more than for non-U.S.-born students.

Table 2. Statistically Significant Results from Mann-Whitney U Analysis of Demographic Variables

	Outcome	Effect	Effect Level	n	Median (IQR)	Mann-Whitney U	p
Engagement	More Connected to Peers b/c of Top Hat	Ethnicity	Caucasian	139	4.00 (3.00, 5.00)	1749.50	0.049
			Non-Caucasian	32	3.50 (3.00, 5.00)		
Anonymity	Value Top Hat's Anonymity when Responding to Personal/Sensitive Questions	Ethnicity	Caucasian	139	4.00 (3.00, 5.00)	1220.50	0.000
			Non-Caucasian	32	3.00 (3.00, 5.00)		
		Language	Native English	154	4.00 (3.00, 5.00)	774.50	0.004
			ESL	17	3.00 (3.00, 5.00)		
		Birth Country	U.S.	154	4.00 (3.00, 5.00)	648.00	0.000
			Outside U.S.	17	3.00 (3.00, 5.00)		
	Answer Sensitive Questions	Language	Native English	154	5.00 (4.00, 5.00)	964.50	0.048
			ESL	17	4.00 (4.00, 5.00)		
More Honestly b/c Top Hat's Anonymous	Birth Country	U.S.	154	5.00 (4.00, 5.00)	888.50	0.015	
		Outside U.S.	17	4.00 (4.00, 5.00)			
Cross-Cultural Learning Outcomes	More Awareness of Diverging Viewpoints b/c of Top Hat	Gender	Female	139	4.00 (3.00, 4.00)	1648.50	0.016
			Male	32	3.00 (3.00, 4.00)		
		Gender	Female	139	4.00 (3.00, 4.00)	1712.50	0.033
			Male	32	3.50 (3.00, 4.00)		
	Cross-Cultural Learning through Top Hat Engagement	Ethnicity	Caucasian	154	4.00 (3.00, 4.00)	1407.50	0.001
			Non-Caucasian	17	3.00 (3.00, 4.00)		
		Language	Native English	154	4.00 (3.00, 4.00)	891.50	0.023
			ESL	17	3.00 (3.00, 4.00)		
		Birth Country	U.S.	154	4.00 (3.00, 4.00)	861.50	0.015
			Outside U.S.	17	3.00 (3.00, 4.00)		
Cross-Cultural Learning through Response Comparisons	Ethnicity	Caucasian	139	4.00 (3.00, 4.00)	1705.00	0.030	
		Non-Caucasian	32	3.50 (3.00, 4.00)			

The researchers identified a few plausible explanations for these findings. Regarding ethnicity, the statistically significant differences between Caucasians and non-Caucasians on measures of classroom engagement, anonymity, and cross-cultural learning may mean that Caucasian students in the class had less prior exposure to cross-cultural issues than non-Caucasian students, and thus more strongly valued the features of Top Hat as cross-cultural topics were explored. This explanation also supports the statistically significant differences that were evident between groups on language (i.e., English first language, ESL) and birth (i.e., non-U.S.-born, U.S.-born). Students who were born outside the U.S. and whose first language was not English would arguably enter a diversity course with more of an awareness of cross-cultural issues than students that were born in the U.S. and whose first language was English. This could explain why ESL and non-U.S.-born students reported lower levels of agreement about the value of Top Hat in aiding their achievement of course objectives; they entered the course with higher levels of cross-cultural awareness.

No statistically significant difference between groups was found for religion (i.e., religious, not religious), age (i.e., 18-20, 21-24), major (i.e., retail merchandising, other), or rank (i.e., upperclassmen, underclassmen) on the measures of classroom engagement, anonymity, or cross-cultural learning. This finding suggests that an SRS may be a useful pedagogical tool in large lecture diversity courses regardless of the enrolled students' year in school or major.

Open-Ended Questions

The open-ended questions were analyzed using Ethnograph 6.0 qualitative data analysis software. Data were independently coded by two researchers using the constant comparative method (Strauss & Corbin, 1990; Creswell, 2007). The process of open, axial, and selective coding was followed by further discussion and negotiation of meanings between the two coders. The results revealed three emergent themes (i.e., anonymous answering, classroom climate, learning outcomes) related to Top Hat use.

Anonymous answering. Three subthemes emerged related to anonymous answering: honesty and trustworthiness, fear and anxiety, and conflict avoidance.

Honesty and trustworthiness. This subtheme was two-fold. Respondents indicated that Top Hat was a platform through which they could express their honest opinions on course topics (e.g., "it was a good way to put your honest opinion in") and that they believed their peers also answered Top Hat questions honestly (e.g., "I believe I learned a lot about it because of the anonymity everyone was truthful"). That is, students trusted that polling result reports were actually representative of the class's beliefs (e.g., "people are more honest and you get a better perspective on certain situations"). There was even an acknowledgment by many students that truthful responses contributed to the class learning experience (e.g., "it gave a chance for the instructor to get honest feedback to then better teach the course").

Fear and anxiety. This subtheme provides support for anonymous answering mitigating some of the fears and anxieties that students might encounter in a diversity course that could hinder their active participation, and thus their learning. For many respondents, Top Hat's anonymity meant that they did not have to be concerned about being judged based on their responses (e.g., "it allowed me to say what I wanted without being afraid of being judged") or worried that they may be singled out by the instructor to answer a question (e.g., "you wouldn't be judged for your answers or randomly called on").

Interestingly, some of the "fear words" used by students related to a concern that they did not have the "right" answer to a question, despite the questions being opinion-based (e.g., "people couldn't see if I had the wrong answers" and "my answers were stupid"). In situations where students have not fully considered or formed opinions on topic areas, there is a propensity for bandwagon effect in which students just agree with the majority. With Top Hat, students could not scan the classroom for nodding heads to determine what the "majority" was, but instead had to consider the questions and register their individual answers. Only after the instructor opened the poll results could students see how their peers responded.

Conflict avoidance. Holland et al. (2013) speculated about "whether anonymity stalls the cognitive process of genuine opinion formation" (Holland et al., 2013, p. 287), stating that in order for students to truly form authentic opinions, they must not only understand why the opinions are held but must also be able to defend the opinions. This subtheme provides support that students valued Top Hat's anonymity due to concerns that other students would disagree with their responses (e.g., "I don't want people knowing my opinion in case they disagree"), suggesting that they may not have been prepared to defend their opinions. Conflict avoidance was also evident among students whose comments suggested that their views were often in opposition to the majority. It is clear that some students valued Top Hat's anonymity because they could learn without engaging in debate over divisive issues. However, it is also plausible that students in the introductory course were being exposed to many of the cross-cultural topics for the first time and had not yet fully considered and formed opinions on these topics, hence the conflict avoidance. Once the students explore the issues further in upper-level courses and in their personal lives, they may feel more comfortable engaging in debate and discussion about their views.

Classroom climate. Two subthemes emerged related to classroom climate: active participation and instructor approach.

Active participation. This subtheme suggests that students valued Top Hat because it made the class more interactive and allowed them to engage with their peers in the large lecture hall. For example, one respondent stated that Top Hat "made it easier for such a large class to interact with each other." Another respondent believed that using Top Hat "got everyone involved which is hard in a big lecture class" and that "everyone was able to voice their own

opinion.” Respondents also suggested that Top Hat was useful because it gave all students an equal opportunity to participate (e.g., “it made class very simple while allowing people to answer who may not otherwise” and “I feel like it made everyone feel equal”). It is also noteworthy that in their responses, students often referred to the Top Hat questions and the instructor’s subsequent commentary as “class discussions” although the instructor was the only one who actually did any speaking (e.g., “got everyone involved and active in the discussions”). This finding provides further support that Top Hat can successfully foster a level of interactivity and engagement in large lecture courses where full class discussions are not a feasible option. Students also enjoyed seeing their peers’ responses (e.g., “I thought that it was really awesome to be able to see what your classmates wrote and thought”) and believed that this feature of Top Hat supported their cross-cultural learning (e.g., “I did learn from comparing my responses to others in the class”). Respondents also believed that active engagement via Top Hat helped them learn the course material and contributed to their success in the course (e.g., “it helped because it kept us active in our learning. We were able to give opinions and it kept us interested” and “It contributed to the success because it allowed us to participate and learn a lot about the course through answering questions”).

Instructor approach. A range of research discusses the relationship between the instructor’s pedagogical approach and cross-cultural learning. Instructors that cultivate an open classroom environment and are perceived by students to be knowledgeable and non-biased in their discussion of cross-cultural issues seem to be the most effectual leaders of diversity courses (Brown, 2004; Holland, 2006; Holland et al., 2013). This subtheme provides support for the idea that instructional support tools, such as Top Hat, are most useful when a credible and open instructor employs them to facilitate student learning and engagement (Holland et al., 2013). For example, one student stated that the instructor “was very open and non-judgmental of every culture and subgroup we talked about” and that “she made us challenge our current thoughts about fashion and why we dress the way we do (our religion or social atmosphere, etc.).” Many students also discussed the learning environment that the instructor cultivated (e.g., “very calm and non-judgmental environment”) and were complimentary of her sensitive approach to challenging topics. One student stated that the instructor “offered questions that were worded so no one would get offended...and got us really thinking about the cultural information,” while another student believed that the instructor “was non-biased and was able to be sensitive to all different cultures and varieties of people.”

Learning outcomes. Holland (2006) hypothesized that student resentment of diversity courses may be higher when they are “told” through course materials (e.g., course objectives, lectures, instructor discussions) that they need to “change” their views on cross-cultural issues. Instead, prompting students to “interrogate their beliefs and exchange ideas in an environment that supports multiple and varied views” (Holland, 2006, p. 199) may be a more effective pedagogical approach to facilitating diversity learning. Likewise, the objectives for the Introduction to Fashion and Culture course delineate a step-by-step process (i.e., awareness →

reflection→ critical analysis→ cross-cultural learning) that does not cite a change in beliefs as a learning outcome. Instead, students are encouraged to commit to maintaining a level of cross-cultural awareness after course completion in order to prepare themselves for global citizenship.

Findings from qualitative data analysis suggest that study participants believed that Top Hat use contributed to their achievement of course objectives. For example, one student stated that Top Hat “made the course more successful because more people participated and there for payed [sic] attention” and that Top Hat “heightened the awareness of cross-cultural perspectives because it showed the diversity between the class.” Another respondent stated the following: “Some of the questions directly questioned our beliefs which made the material more useful/applicable to each individual.”

Conclusions and Recommendations

This study contributes to the growing body of pedagogical research on improving the student learning environment in cross-cultural large lecture courses through the use of student response systems (SRS) and provides a foundation for further research exploration. Results from data analysis on the open- and closed-ended questions provide initial support for using an SRS to increase student engagement and comfort in exploring the cross-cultural subject matter. The SRS’s anonymity is beneficial for eliciting honest responses on sensitive course content which leads to more relevant instruction from the professor.

Additional research is needed to further explore the role of the SRS in facilitating achievement of course objectives (i.e., diversity learning) in cross-cultural, large lecture courses. However, a review of the extant literature and the findings from the present study support SRS programs as useful pedagogical tools only to the extent that their advantages (e.g., cultivating engagement in large lectures, highlighting the diversity of student opinions and beliefs) are leveraged through the instructor’s pedagogical style to facilitate an open classroom environment in which thoughtful reflection and critical analysis of cross-cultural issues can occur (Holland et al., 2013; Trees & Jackson, 2007). It is also important to acknowledge that each class section has a distinct “culture” (i.e., composition, student learning styles, individually held opinions and beliefs) that shapes the course experience. Approaches that are well received and facilitate learning in one class might not be as successful under different conditions. However, an SRS allows instructors to continually probe their classes and adapt the pedagogical approach as necessary to maximize students’ cross-cultural learning.

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