AC 2012-4032: USING WEB 2.0 AND SOCIAL NETWORKING TECHNOLOGIES IN THE CLASSROOM: A COMPARISON OF FACULTY AND STUDENT PERCEPTIONS

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Using Web 2.0 and Social Networking Technologies in the Classroom: A Comparison of Faculty and Student Perceptions

Abstract

There is increased discussion over the idea of incorporating tools typically used for social interactions, such as Web 2.0 and Social Networking Technology (SNT), into educational settings. Do faculty and students have the same views on the subject? This paper investigates whether there is a difference between the perceptions of Engineering and Technology faculty and students in regards to the effectiveness of using Web 2.0 and SNT in university settings. Data in the study was obtained from a survey sent to all faculty and students in a School of Engineering and Technology at a large urban university in the Midwest. The 30 question survey was intended to determine the faculty and students' current uses and familiarity with SNT and Web 2.0 as well as gauge the perceptions of the appropriateness of these technologies for academic use. Results indicate that faculty perceptions of the effectiveness of Web 2.0/SNT use within the classroom were more positive than students'. These results enable university faculty to make informed decisions on how to engage their technology-savvy students and develop new teaching methodologies to meet the needs of both faculty and students.

Keywords: Social Networking Technology, Web 2.0, Classroom Effectiveness

Introduction

According to Shaohua and Peilin[1], Web 2.0 is the "second wave of the World Wide Web…that allows individuals to publish, collaborate and share experiences with other like-minded individuals or groups". These technologies allow people to communicate, interact, and engage in discussions on topics across all genres and without geographical limitation. Social networking sites such as Facebook, Twitter, YouTube, and Myspace have been integrated into daily life for many students, and the growth and reach of Web 2.0 and social networking technology (SNT) has skyrocketed across generations and even continents. Facebook now boasts over 800 million users worldwide with over 50% of those logging in on a daily basis[2]. Similarly, over 3 billion videos are viewed each day on YouTube and more than 13 million hours were uploaded to the site in 2010 alone[3].

With the remarkable global activity that Web 2.0 and SNT have cultivated thus far in the social arena, discussions among the Engineering and Technology academic community have begun to take place over the subject of extending the use of Web 2.0 and SNT into the classroom in an attempt to ameliorate some of the challenges present in higher education. Many collegiate faculty members have been faced with a "regular struggle to get students to ask questions and participate in discussions"[4]. As a result, student engagement is "becoming increasingly important in higher education…[and the] traditional lecture-only format is losing its prevalence in the classroom"[4]. The transition away from traditional educational methods has generated increased discussion over the idea of incorporating tools typically used for social interactions such as Web 2.0 and SNT into educational settings such as Engineering and Technology collegiate classrooms.

This paper investigates whether there is a significant difference between the perceptions of Engineering and Technology faculty and students in regards to the effectiveness of using Web 2.0 and SNT in university settings. By examining the perceptions of effectiveness of Web 2.0

and SNT in the classroom environment, this study has the potential to enable university faculty to make informed decisions on how to engage their technology-savvy students. If there is a strong desire to integrate these technologies among faculty and students, the possibility exists for better student engagement and new teaching methodologies using SNT can be developed as a result to meet the needs of both faculty and students.

Literature Review

Defining Web 2.0 and SNT as interactive online communities is a common theme in existing literature. Several sources[1,4,5, 6, 7, 8] described the movement towards Web 2.0 as making the Internet more user-based and collaborative rather than a tool used for informational purposes only. They all validated the concept of Web 2.0 as providing an interactive forum for sharing of ideas, concepts, and entertainment collaboratively. Within the context of Web 2.0, there were several types of technologies discussed such as forums, blogs, wikis, social networking applications, Really Simple Syndication (RSS), and social bookmarking[5]. Popular social networking sites mentioned include Facebook, Myspace, YouTube, and www.blogger.com[6]. These various tools provide both non-technical and technical users the opportunity to create content that can be displayed on the web for others to view, provide feedback, or edit. In a sense, Web 2.0 and social networking technologies are empowering the user to create their own virtual experience where they have the ability to create rather than simply receive information.

The current generation of tech-savvy students possesses different characteristics than their predecessors and requires different types of attention to remain connected to the learning process. Orehovacki, Bubas, & Konecki[7] confirmed that today's students have different characteristics than those of previous generations who were not as technology-savvy and did not necessarily utilize the Internet as a part of their education. According to Hamid, Chang, and Kurnia[8], this new generation of students, or "Digital Natives", has different requirements in order to become engaged into the learning process. Williams and Chinn[9] determined that the use of familiar Web 2.0 tools allowed for increased active learning and excitement in the students by re-creating experiences that mirrored their real-life scenarios. Meanwhile, Shaohua and Peilin[1] agreed that integrating Web 2.0 technologies into the classroom can increase learners' course satisfaction and interaction levels. With this said, most research is still inconclusive about the effect of Web 2.0 and SNT on classroom engagement and its effect on student performance.

The emergence of Web 2.0 and SNT as a dominant force for communication and interaction among various groups of people has led to discussion among the academic community regarding whether or not these technologies are actually effective within the classroom setting. While effectiveness in regards to classroom performance has not been successfully determined and still exists as a gap in the academic community's knowledge of Web 2.0's effect on higher education, there are parallels that exist between using online courses and Web 2.0. Several studies[7, 8, 10] have been conducted to determine if there are any significant differences between students who have chosen an online course of study versus a more traditional lecture method. According to Tan[10], students who participated in online learning communities were found to have a higher level of enthusiasm and self-motivation than traditional students. In addition to this, students who participated in the study as members of the online learning control group were also determined to develop a sense of isolation. This observation can be remedied using interactive

activities which in turn have the potential to create cohesive relationships simulating those in a face-to-face classroom setting[10]. With this said, there is definitely a strong potential for further research within the realm of Web 2.0 effectiveness within education.

In addition to student engagement and effectiveness, there is also a great debate among scholars over the appropriateness of these technologies within university classrooms. Many researchers[1, 5, 6, 7] suggest that there is potential for the use of Web 2.0 within the classroom, but there are still several barriers and precautions necessary prior to a successful deployment of the technology for educational purposes. Hamid, Chang, & Kurnia[8] and Williams and Chinn[9] suggest that careful and highly scrutinized planning must take place prior to any implementation of Web 2.0 technologies. Overall, there is still a great disagreement over the appropriateness of these technologies in university settings as well.

The intended result of this endeavor is to discover more about the perceptions of using Web 2.0 and SNT within the collegiate Engineering and Technology environment. There has been very little research over this topic specifically in regards to Engineering and Technology, and it could prove to be beneficial for future educational approaches.

Methodology

Participants

Data in the study was obtained from a sample of faculty and students from the School of Engineering and Technology at Indiana University-Purdue University Indianapolis. There is a population of approximately 2400 students attending the school and 200 full- and part-time faculty. The school offers a wide array of degree program options such as Biomedical Engineering Technology, Computer, Information, and Leadership Technology, and Engineering Technology.

Materials

A questionnaire was created for the purpose of this study using the Zoomerang web-based tool. The 30 question survey was intended to determine faculty and students' current uses and familiarity with SNT and Web 2.0 as well as gauge the perceptions of the appropriateness of these technologies within an educational setting. The topics explored include personal use and comfort with computers and social networking technologies, academic use of social networking technologies, and student engagement[4]. The first six questions on the survey were to obtain basic demographic information from the participant, and the 24 remaining questions were a mix of multiple choice and Likert scale questions with two open-ended questions at the conclusion of the survey in which free text responses were accepted. This study focuses primarily on five of the Likert scale questions as shown in Table 1 and the open-ended question "What role do you think Web 2.0/Social Networking Technology should play in the classroom?"

Table 1. Likert scale survey questions of interest

Web 2.0/SNT can be effectively used to:
20. Help faculty and students communicate with each other about course material
21. Encourage academic collaboration among students
22. Coordinate classroom activities such as meetings and fieldwork
23. Distribute course-related information such as assignments and announcements
24. Involve students in professional and field-related activities outside the classroom

Procedure

An email containing the URL to the survey was distributed to the Engineering and Technology student and faculty populations through established listservs over a one month period from December 2009 to January 2010. After the response period was completed, the results were compiled using Zoomerang.

Results

Of the approximately 200 full and part-time faculty members at the school, 70 questionnaire responses were received representing an array of disciplines including Computer, Information, and Leadership Technology, Design and Communication Technology, and Engineering Technology), resulting in a 35% response rate. Out of the 2400 students attending the School of Engineering and Technology, there were 191 unique visits to the survey link and 155 completed responses, resulting in an 8% response rate. The students were also studying a diverse range of disciplines including Biomedical Engineering Technology, Computer, Information, and Leadership Technology, and Electrical and Computer Engineering among others. Table 2 provides a summary of the respondents by discipline.

In addition to the students and faculty representing a wide variety of disciplines, there was also a broad range of demographic characteristics for participants. Tables 3 and 4 below show the distribution of participants by age and ethnicity, respectively. Both age distributions were cross-generational with faculty representatives in age ranges from 24-64+ and students in age ranges from 18-63. The majority of both samples indicated that they are Caucasian, but there are representatives from other ethnicities in the sample as well.

Table 2. Distribution of Faculty and Student affiliations by discipline

Discipline	Faculty		Student	
	N	%	N	%
Biomedical Engineering	3	4%	8	5%
Biomedical Engineering Technology	1	1%	2	1%
Computer, Information, and Leadership Technology	18	26%	33	21%
Design and Communication Technology	15	21%	19	12%
Electrical and Computer Engineering	5	7%	26	17%
Engineering Technology	16	23%	24	15%
Music and Arts Technology	5	7%	3	2%
Other/No Response	7	10%	40	26%
Total	70	100%	155	100%

Table 3. Distribution of Faculty and Students by Age

Age	Faculty		Student	
	N	%	N	%
18-20	0	0%	33	21%
21-23	0	0%	48	31%
24-33	9	13%	47	30%
34-43	16	23%	19	12%
44-53	16	23%	6	4%
54-63	22	31%	2	1%
64+	7	10%	0	0%
Total	70	100%	155	100%

Table 4. Distribution of Faculty and Students by Ethnicity

Ethnicity	Faculty		Student	
	N	%	N	%
African	0	0%	3	2%
African American	0	0%	8	5%
Asian / Pacific Islander	3	4%	9	6%
Caucasian	63	93%	112	76%
Hispanic	1	1%	5	3%
Middle Eastern	1	1%	4	3%
Native American	0	0%	2	1%
Other, please specify	0	0%	5	3%
Total	68	100%	148	100%

The populations were also polled regarding whether or not they owned certain types of electronic devices. From this inquiry, it was discovered that the majority of students and faculty own some type of computer—either laptop and/or desktop. As a contrast, smartphone usage was determined to be only 45% for students and 40% for faculty as shown in Table 5.

Table 5. Frequency of technology use by faculty and students

Do you/Did you own: (check all that apply)	Faculty		Student	
	N	%	N	%
Traditional Style Cell Phone	48	69%	108	70%
Smartphone Such as iPhone, BlackBerry, etc.	28	40%	69	45%
Desktop Computer	61	87%	105	68%
Laptop Computer	65	93%	139	90%
Mobile Web Device (Internet-enabled MP3 Player, Amazon Kindle, etc.)	19	27%	42	27%
Other, please specify	6	9%	0	0%

Independent samples t tests comparing the mean Likert scale scores of faculty and students were calculated for questions 20-24 in Table 1. Results are shown below in Table 6 with mean scores represented on a Likert Scale from 1-Strongly Disagree to 5-Strongly Agree. There was a significant difference between the means of the two groups for all five questions regarding whether Web 2.0/SNT can be effectively used within classroom settings. Overall, mean faculty scores were significantly higher, and thus more positive, regarding the effectiveness of SNT than mean student scores.

Qualitative analysis was also performed on open-ended Question 25, "What role do you think Web 2.0 / Social Networking Technology should play in the college classroom?" For this question, there were a total of 122 student responses and 43 faculty responses. The most frequent responses involved the themes of "SNT should play no role" (74 responses), SNT has possible uses or benefits (66 responses), and SNT is redundant to other alternative technologies as shown in Table 7. The opinions expressed were quite strong at times such as the following quote from a student participant who believes that there is "ABSOLUTELY NO REASON TO USE WEB 2.0/SOCIAL NETWORKING TECHNOLOGY in our classroom settings. We have way too many forms of communication we must keep track of to keep in touch with our classmates and instructors. Rather than introducing YET another, we should perfect the ones we have….". Opposing these negative views, there were also some who took a more positive

Table 6. Significant differences determined by independent samples t tests

Web 2.0/SNT can be effectively used to:	t	df	p	Faculty	Student
20. Help faculty and students communicate with each other about course material	-4.934	219	0.000	N=69 *m*=3.565 *sd*=0.915	N=152 *m* =2.816 *sd* =1.100
21. Encourage academic collaboration among students	-2.582	184.5	0.011	N=69 *m* =3.725 *sd* =0.838	N=155 *m* =3.361 *sd* =1.221
22. Coordinate classroom activities such as meetings and fieldwork	-2.167	170.5	0.032	N=68 *m* =3.529 *sd* =0.938	N=152 *m* =3.197 *sd* =1.266
23. Distribute course-related information such as assignments and announcements	-2.301	183.9	0.023	N=69 *m* =3.580 *sd* =0.881	N=151 *m* =3.238 *sd* =1.274
24. Involve students in professional and field-related activities outside the classroom	-2.477	177.3	0.014	N=69 *m* =3.710 *sd* =0.893	N=153 *m* =3.346 *sd* =1.237

approach such as one faculty participant who mentioned that SNT can be effective in assisting with "extending classroom information to beyond the end of the class, and assist[ing] students in setting up a network of business social network to help them in their professional careers." There were also several who took a much more neutral approach and expressed uncertainty regarding the effectiveness of Web 2.0/SNT such as one faculty member who responded saying they were "Not quite sure. Still trying to figure it out".

Discussion

While faculty perceptions of Web 2.0/SNT use within the classroom were more positive than students', there is still a divide between those who advocate and those who oppose SNT's use in the classroom resulting in overall neutral Likert scale scores for SNT's effectiveness. The qualitative research showing a similar trend with the total number of faculty and students who believe that Web 2.0/SNT should not be used within the classroom (74) coming in very closely to the number of those that believe it would be effective (66). It is important to note the distinction between some of the aspects of SNT within the classroom that concerned faculty

Table 7. Frequency of observed themes from Question 25

Observed Themes:	Frequency of Faculty Response	Frequency of Student Response	Total
SNT should play no role	12	62	74
SNT has possible uses or benefits	11	55	66
SNT is redundant to other alternative technologies	8	35	43
SNT can be used for collaboration among students/faculty	14	18	32
SNT should be separate from academics	5	19	24
SNT can be a distraction to students	1	20	21
SNT can be used in a supplemental role	6	12	18
SNT disadvantages certain students	1	11	12
SNT use creates possible privacy/security issues	0	11	11
SNT would need guidelines in place prior to implementing	5	2	7

and those that troubled students such as the theme regarding separation of social sites and academia as well as maintaining privacy in their online activities. Comparatively, a much larger percentage of faculty participants believed that Web 2.0/SNT could assist with collaboration efforts within classes and mentioned that universities should require the implementation of guidelines and standards prior to use. Consequently, there is still room for further discussion regarding the most effective uses of Web 2.0/SNT as well as determining guidelines for how the technologies should be implemented within an Engineering and Technology classroom.

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Appendix A. Faculty survey questions

SECTION 1: DEMOGRAPHICS

1. Primary school affiliation
2. Primary department affiliation
3. Academic rank
4. Position
5. Level(s) of classes you typically teach (Check all that apply.)
6. Gender
7. Age
8. Ethnicity (Optional)

SECTION 2: PERSONAL USE OF COMPUTER AND WEB 2.0 / SOCIAL NETWORKING TECHNOLOGIES

9. Do/did you own (Check all that apply.)
10. Rate your *confidence* level in using computer technologies in general.
11. Rate your *knowledge* of computer technologies in general.
12. Do you use any of the following Social Networking Technologies? (Check all that apply.)
13. If you use Web 2.0 / Social Networking Technologies, do you have students as friends or contacts on those sites?
14. If you use Web 2.0 / Social Networking Technologies, how many hours per day do you typically spend using them?

SECTION 3: ACADEMIC USE OF AND OPINIONS ON WEB 2.0 / SOCIAL NETWORKING TECHNOLOGIES

15. What feature(s) of Oncourse do you use? (Check all that apply.)
16. Do your students use personal laptops or desktop computers during class time to engage in learning?
17. Have you ever used any of the following Web 2.0 / Social Networking Technologies to interact with students for academic purposes? (Check all that apply.)
18. Do you use a *cell phone or mobile Web device (non-laptop)* to access Web 2.0 / Social Networking Technologies for any of the following purposes? (Check all that apply.)
19. Do you use a *laptop or desktop computer* to access Web 2.0 / Social Networking Technologies for any of the following reasons? (Check all that apply.)
20. Web 2.0 / Social Networking Technologies can be effectively used to help faculty and students communicate with each other about course material.
21. Web 2.0 / Social Networking Technologies can be effectively used to encourage academic collaboration among students.
22. Web 2.0 / Social Networking Technologies can be effectively used to coordinate classroom activities such as meetings and fieldwork.

23. Web 2.0 / Social Networking Technologies can be effectively used to distribute course-related information such as assignments and announcements.
24. Web 2.0 / Social Networking Technologies can be effectively used to involve students in professional and field-related activities outside the classroom.
25. What role do you think Web 2.0 / Social Networking Technology should play in the college classroom?

SECTION 4: STUDENT ENGAGEMENT IN THE CLASSROOM

26. Typically, how would you rate the level of student engagement in your class lectures?
27. When students are not engaged, what do you think is the reason? (Check all that apply.)
28. Do students need to be actively engaged in your classroom to be successful in your classes?
29. Do you find your students are more engaged in your classes when you:

SECTION 5: ADDITIONAL INFORMATION

30. What information would you like to add about the role of Social Networking Technologies in the college classroom?

Appendix B. Student survey questions

SECTION 1: DEMOGRAPHICS

1. Primary school affiliation
2. Program / Major:
3. Academic status
4. Gender
5. Age
6. Ethnicity (optional)

SECTION 2: PERSONAL USE OF COMPUTER AND WEB 2.0 / SOCIAL NETWORKING TECHNOLOGIES

7. Do/did you own (Check all that apply.)
8. Rate your *confidence* level in using computer technologies in general.
9. Rate your *knowledge* of computer technologies in general.
10. Do you use any of the following Web 2.0 / Social Networking Technologies? (Check all that apply.)
11. If you use Web 2.0 / Social Networking Technologies, do you have classmates as friends or contacts on those sites?
12. If you use Web 2.0 / Social Networking Technologies, do you have instructors as friends or contacts on those sites?
13. If you use Web 2.0 / Social Networking Technologies, how many hours per day do you typically spend using them?

SECTION 3: ACADEMIC USE OF AND OPINIONS ON WEB 2.0 / SOCIAL NETWORKING TECHNOLOGIES

14. What feature(s) of Oncourse do you use? (Check all that apply.)
15. Do you use personal laptops or desktop computers during class time to engage in learning?
16. Have you ever used any of the following Web 2.0 / Social Networking Technologies to interact with classmates for academic purposes? (Check all that apply.)
17. Have you ever used any of the following Web 2.0 / Social Networking Technologies to interact with instructors for academic purposes? (Check all that apply.)
18. Do you use a *cell phone or mobile Web device (non-laptop)* to access Web 2.0 / Social Networking Technologies for any of the following purposes? (Check all that apply.)
19. Do you use a *laptop or desktop computer* to access Web 2.0 / Social Networking Technologies for any of the following reasons? (Check all that apply.)
20. Web 2.0 / Social Networking Technologies can be effectively used to help faculty and students communicate with each other about course material.

21. Web 2.0 / Social Networking Technologies can be effectively used to encourage academic collaboration among students.
22. Web 2.0 / Social Networking Technologies can be effectively used to coordinate classroom activities such as meetings and fieldwork.
23. Web 2.0 / Social Networking Technologies can be effectively used to share course-related information such as assignments and announcements among students and/or faculty.
24. Web 2.0 / Social Networking Technologies can be effectively used to involve students in professional and field-related activities outside the classroom.
25. What role do you think Web 2.0 / Social Networking Technology should play in the college classroom?

SECTION 4: STUDENT ENGAGEMENT IN THE CLASSROOM

26. Typically, how would you rate your level of engagement in your classes?
27. When you are not engaged in the classroom, what are the most likely reasons?
28. Do you need to be actively engaged in a class to learn in that class?
29. Do you find that you are more engaged in your classes when the instructor (Check all that apply.)

SECTION 5: ADDITIONAL INFORMATION

30. What information would you like to add about the role of Web 2.0 / Social Networking Technologies in the college classroom?

Appendix C. SPSS Outputs

Question 20: Independent Samples T-Test (significant) Web 2.0 / Social Networking Technologies can be effectively used to help faculty and students communicate with each other about course material.

Group Statistics

	Q20_Grouping	N	Mean	Std. Deviation	Std. Error Mean
Q20_Response	Student	152	2.8158	1.10040	.08925
	Faculty	69	3.5652	.91520	.11018

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Q20_Response	Equal variances assumed	.594	.442	-4.934	219	.000	-.74943	.15190	-1.04880	-.45006
	Equal variances not assumed			-5.285	156.235	.000	-.74943	.14179	-1.02951	-.46935

Question 21: Independent Samples T-Test (significant) Web 2.0 / Social Networking Technologies can be effectively used to encourage academic collaboration among students.

Group Statistics

	Q21_Grouping	N	Mean	Std. Deviation	Std. Error Mean
Q21_Response	Student	155	3.3613	1.22147	.09811
	Faculty	69	3.7246	.83814	.10090

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Q21_Response	Equal variances assumed	12.172	.001	-2.245	222	.026	-.36335	.16181	-.68224	-.04446
	Equal variances not assumed			-2.582	184.534	.011	-.36335	.14074	-.64101	-.08569

Question 22: Independent Samples T-Test (significant) Web 2.0 / Social Networking Technologies can be effectively used to coordinate classroom activities such as meetings and fieldwork.

Group Statistics

	Q22_Grouping	N	Mean	Std. Deviation	Std. Error Mean
Q22_Response	Student	152	3.1974	1.26616	.10270
	Faculty	68	3.5294	.93793	.11374

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Q22_Response	Equal variances assumed	9.370	.002	-1.937	218	.054	-.33204	.17144	-.66993	.00584

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Q22_Response	Equal variances assumed	9.370	.002	-1.937	218	.054	-.33204	.17144	-.66993	.00584
	Equal variances not assumed			-2.167	170.496	.032	-.33204	.15325	-.63455	-.02954

Question 23: Independent Samples T-Test (Significant) Web 2.0 / Social Networking Technologies can be effectively used to distribute course-related information such as assignments and announcements.

Group Statistics

	Q23_Grouping	N	Mean	Std. Deviation	Std. Error Mean
Q23_Response	Student	151	3.2384	1.27388	.10367
	Faculty	69	3.5797	.88127	.10609

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
							Mean Differen ce	Std. Error Difference	95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)			Lower	Upper
Q23_Response	Equal variances assumed	14.118	.000	-2.015	218	.045	-.34130	.16939	-.67515	-.00745
	Equal variances not assumed			-2.301	183.859	.023	-.34130	.14833	-.63395	-.04865

Question 24: Independent Samples T-Test (significant) Web 2.0 / Social Networking Technologies can be effectively used to involve students in professional and field-related activities outside the classroom.

Group Statistics

	Q24_Grouping	N	Mean	Std. Deviation	Std. Error Mean
Q24_Response	Student	153	3.3464	1.23715	.10002
	Faculty	69	3.7101	.89281	.10748

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower	Upper
Q24_Response	Equal variances assumed	10.464	.001	-2.197	220	.029	-.36374	.16558	-.69007	-.03741
	Equal variances not assumed			-2.477	177.285	.014	-.36374	.14682	-.65348	-.07400