12-4-2015

Lectures of the 21st century: Hispanic students' perceptions of active learning

Cihtlalli Guadalupe Garcia

LECTURES OF THE 21ST CENTURY: HISPANIC STUDENTS' PERCEPTIONS OF ACTIVE LEARNING

A Thesis

by

CIHTLALLI GUADALUPE PEREZ

Submitted to Texas A&M International University
in partial fulfillment of the requirements
for the degree of

MASTER OF SCIENCE

December 2015

Major Subject: Psychology

Lectures of the 21st Century: Hispanic Students' Perceptions of Active Learning

LECTURES OF THE 21ST CENTURY: HISPANIC STUDENTS' PERCEPTIONS OF ACTIVE LEARNING

A Thesis

by

CIHTLALLI GUADALUPE PEREZ

Submitted to Texas A&M International University
in partial fulfillment of the requirements
for the degree of

MASTER OF SCIENCE

Approved as to style and content by:

Chair of Committee,	Monica E. Muñoz
Committee Members,	Roberto Heredia
	Gilberto Salinas
	Marcela Uribe
Head of Department,	Jose Lozano

December 2015

Major Subject: Psychology

ABSTRACT

Lectures of the 21st Century: Hispanic Students' Perceptions of Active Learning
(December 2015)

Cihtlalli Guadalupe Perez, B.S., University of Texas at Austin

Chair of Committee: Dr. Monica E. Muñoz

With the current movement towards active engagement in higher education, research on student perception of teaching strategies can shed light into how teaching practices are received. While there is abundant research on student perception of active learning, little research has focused on how Hispanic students perceive this form of pedagogy. The primary purpose of this study is to examine how Hispanic students respond to active learning classrooms. This descriptive study will provide initial findings of students' responses to active learning, enabling institutions and instructors to understand challenges and address barriers to improve the graduation rates of Hispanic students.

A total of 417 participants at a Hispanic serving institution completed a self-report survey that assessed students' response to activities in active learning classrooms and instructors' effectiveness. Results from both quantitative and qualitative measures showed that the majority of this sample of Hispanic students responded favorably to active learning courses and to the instructor. Students perceived activities, such as collaborative learning and quizzes, as helpful in their learning. Furthermore, gender differences were found in this study; female students responded with more positive attitudes than male students towards

their active learning instructor. Although there was a strong positive feedback towards the active learning course, results show that a portion of students' struggled with activities in the classroom. Results indicated that unlike previous research, this sample of Hispanic students responded favorably towards active learning; consistent with previous studies, however, resistance can be observed as instructors transfer the responsibility of learning to the students. The main findings of this study provide ideas for future venues of research on Hispanic students in higher education to explore find best teaching practices and increase graduation rates among Hispanic students.

ACKNOWLEDGEMENTS

I would like to thank my committee chair, Dr. Muñoz, and committee members, Dr. Heredia, Dr. Salinas, and Dr. Uribe, for their guidance and support throughout the course of this research. I greatly appreciate your comments and feedback through this journey!

TABLE OF CONTENTS

Page

LIST OF TABLES

Page

LIST OF FIGURES

Page

INTRODUCTION

As higher education shifts to active learning classrooms, students' perception of the learning environment should be an integral part of research regarding current pedagogy. Students' responses to teaching strategies can motivate or prevent instructors from implementing engaging techniques in the classroom. Understanding how students respond to active learning can enable higher education institutions to provide their students with appropriate tools for learning, improving student success.

Ample research on active learning provides evidence of increased student understanding, enticing faculty to adapt strategies into their traditional lectures. Although active learning activities have a positive impact on learning, there is student resistance as strategies are implemented in the classroom. Studies find that students prefer traditional lectures since their focus is on the presentation of material from an expert, rather than engaging with the material to improve understanding of course content (Lake, 2001; Fisher, Alder, & Avasalu, 1998). Current student perception research is centered on comparing students' responses towards traditional lectures to responses toward active learning classrooms, with results highlighting student dissatisfaction with course and instructor in active learning courses. Findings show that students interpret active learning strategies, such as collaborative learning and discussions, as a distraction to the main goal of the class, which is the instructor's lecture. A common theme found in student perception studies is that students want to receive knowledge from the expert. *"The most important thing during class is to get the correct interpretation from the lecturer. What I or the group think is of no relevance and value"*; this comment from a student in an

---

This thesis follows the style of *Journal of Educational Psychology*.

active learning course echoes the current dissatisfaction among students who experience non-traditional lectures (Blignaut, 2004).

Although there is research on student perception to active learning, results may not be applicable to universities serving various ethnic populations. Minimal research has focused on Hispanic students and their perception of learning strategies. Notwithstanding, the number of Hispanics enrolled in higher education has increased dramatically in the last two decades (U.S. Census, 2012). As the number of Hispanic students in higher education rises, research on Hispanic students can provide much needed findings regarding their learning and educational experience.

By examining how Hispanic students perceive active learning, higher education administrators and educators can better understand students' learning processes, improving their success in higher education. Professional development programs for instructors can be created specifically with the needs of Hispanic students. In addition, faculty can better develop models to implement active learning strategies and create a successful learning environment.

Background Information

Higher education pedagogy. Although traditional lectures have been the predominant pedagogy in higher education, research shows that students' passive participation in the learning process leads to poor understanding of the material (Covill, 2011). Lectures create a passive environment as students receive knowledge from an expert without engaging with course content. A key argument against lectures emerged from Constructivism Theory, which highlights the importance of active learning as knowledge is acquired (Cunningham & Duffy, 1996). Constructivism centers on the idea that learning is a process of uniquely creating knowledge, not merely acquiring knowledge from others. According to this theory, lectures

prevent engagement with academic material since students passively listen to the information presented, preventing them from making meaningful connections. For this reason, colleges across the United States and other countries have started adopting active learning strategies to improve student learning.

Active learning. Research in the last three decades has focused on instructional practices to improve pedagogy in post-secondary education (Lammers & Murphy, 2002; Jungst, Wiersema, & Licklider, 2003). Based on pedagogical research, educators are moving from teacher-centered learning to student-centered learning. Student-centered learning is defined as a pedagogy that engages students as active participants and provides them with different opportunities to learn through meaningful learning activities (Felder & Brent, 1996; Prince, 2004). Through dynamic learning environments, student-centered learning is characterized by transferring the responsibility of learning to the student through active learning. The purpose of student responsibility is due to the idea that effective learning strategies require learners to participate (Felder & Brent, 1996; Lea, Stephenson, & Troy, 2003; Sanders, 1998). Active learning provides students the opportunity to analyze academic material through different activities, such as cooperative learning, discussions, and problem solving (Machemer & Crawford, 2007). These different instructional practices provide students with opportunities to reflect and analyze the material presented, with the goal of strengthening learning connections. A main goal of active learning is to move away from rote recall and memorization to understanding and application inside and outside the classroom (Jungst, Wiersema, & Licklider, 2003). Furthermore, research focused on the millennial generation urges educators to modify their instructional practices to connect with today's students (Mangold, 2007). By

engaging the students, instructors can strengthen the student-faculty relationship to increase student success.

Literature on active learning provides outstanding evidence on the effectiveness of active learning (Qualters, 2002). Prince (2004) performed a review of active learning literature and found that active learning activities provide students with engagement opportunities that increase their overall grade and performance. Activities performed during lecture allow students to increase their recall of material presented, highlighting the effectiveness of active learning. A longitudinal study by Lonka and Ahola (1995) highlights the positive effect of active learning. The six-year study compared students in active learning courses to those in traditional lectures. The findings suggest that students in active learning classrooms studied for a longer period of time and completed their undergraduate studies with higher grade point averages than their counterparts in traditional classrooms. Furthermore, Campbell and Mayer (2009) found that courses with active learning activities significantly increased student retention of course material. This experimental study compared student understanding of cognitive theories with a post-test. The study compared students in a traditional lecture and a collaborative learning group after the same material was presented to both groups. The experimental group (collaborative learning) had the opportunity to discuss their understanding with their peers throughout the lecture. The results indicate that the discussion between group members increased student understanding of the theories presented in class. The results highlight the positive impact that active learning can have on student learning.

There are multiple ways that faculty can implement active learning into their classrooms to support student understanding. Some of the widely used components of active learning include: collaborative learning, discussions, and problem solving activities, such as in-class

quizzes and pre- and/or post- class quizzes (Qualters, 2002). These activities are considered part of active learning because students need to prepare before class to effectively complete quizzes or participate in activities.

Quizzes. Quizzes help students prepare for class by holding them accountable for completing readings and homework assigned. There are different types of quizzes to test students, pre- and post- class quizzes allow instructors to check student understanding before and after class. This allows faculty to check for misinterpretation of material and to address difficult topics as needed, adapting their lectures to students' needs. Furthermore, continuous testing encourages students to review material. Narloch, Garbin, and Turnage (2006) studied the benefits of pre-lecture quizzes on student grades in a psychology course. The results in this study show that students have significantly higher exam grades than a control section, which does not engage in quizzes (Narloch, Garbin, & Turnage, 2006). Since students need to understand course material throughout the semester due to the quizzes, the students have a better understanding of concepts at the time of the exams. Gier and Kreiner (2009), incorporated quizzes during their lecture to test student understanding; the results in this study also support the data of on the impact of on student learning. The researchers compared a control group, section of traditional lecture to the experimental group, section with lecture and in-class quizzes to identify the effect of teaching on student learning. The results highlight that students in the experimental section performed significantly higher in exam and final grades. Gier and Kreiner suggest that the small modification to a lecture created a significant impact to student learning, which is supported by the student performance results.

With the help of technology, instructors have a number of ways to assign quizzes during lecture and outside of the classroom. Technology helps accommodate larger classes and engage

students through different means. Poirier and Feldman (2007) assigned quizzes through *individual response technology* (IRT), such as clickers, to enhance a traditional lecture. With IRT, instructors can test student understanding and provide immediate feedback on any misinterpretation of information. This study compared the final grades of students in a traditional lecture and those enrolled in the IRT section. Exam grades were averaged and compared, and the results highlight that students in the IRT section performed significantly better than the students in the traditional class. With IRT students can answer questions without the pressure of being singled out during class; furthermore, students can be more likely to participate even when they are not sure of their answers since only the instructor can identify their answers.

Quizzes require students to learn information and put their knowledge to practice, providing them with opportunities to correct misconceptions and retain correct information. With the help of technology, there are numerous ways that instructors use this active learning strategy to improve student learning.

Collaborative learning. Collaborative learning is another key element in active learning since it enhances motivation, increases retention of knowledge, and provides in-depth view of topics as participants share their points of view on the material (Felder & Brent, 1996; Hillyard, Gillespie, & Littig, 2010). There are a number of possible activities that can be designated as collaborative learning, for example think-pair-share, jigsaw group work, and group work all fall under the umbrella of collaborative learning. These different strategies promote learning and responsibility by prompting students to share their ideas and explore them within the context of course material (Schul, 2011). When students share their ideas, they are able to understand different points of view and correct any misunderstandings. In addition, cooperative learning

prepares students with necessary social skills; as students learn from each other and discuss ideas from class, they can practice skills that can be applicable in professional settings (Schul, 2011).

Luntungan (2014) used an experimental design to investigate the relationship between teaching method and academic performance on two sections of a business course. One section was taught in a traditional lecture, while the other used lecture and group work. The findings show that the section with group work had significantly higher final grades those students in the traditional lecture. This study was performed with in a large class, and the results showcase how active learning activities work with a large number of students and boost their academic performance. An interesting finding from studies on collaborative learning is the gender differences and engagement with group work. Stump, Hilpert, Husman, Chung, and Kim (2011) studied collaborative learning in engineering students and its effect on achievement. The researchers found that women reported a greater use of collaborative learning than male counterparts.

Although research demonstrates the positive effect of active learning on academic performance there is a vital challenge that college instructors face as they modify their traditional lectures. College students have been exposed to certain teaching styles since their elementary education. Students are unfamiliar with independent, active learning strategies and changes to their schema of a classroom environment can cause dissatisfaction. Felder and Brent (1996) state, “When confronted with a need to take more responsibility for their own learning, students may grouse that they are paying tuition, to be taught, not to teach themselves.” Students may believe that they best way for them to learn is by listening to an expert on the topic; however, they do not understand the important role they play in the process of learning.

Literature Review

Student perceptions of active learning. Studies on student perceptions of active learning classrooms highlight the resistance instructors face as they implement student-centered learning. Lake (2001) compared perceptions of students in two sections of a physiology course that were exposed to either active learning or traditional lecture. The focus of this study was to assess student learning and perceptions of the course, instructor effectiveness, and course difficulty for the two sections. Results showed that students in the active learning section earned higher exam grades and final grades were significantly higher than those of their counterparts in the lecture section. However, the active learning students' perception of the instructor's effectiveness and self-learning scores were significantly lower. The results highlight a trend seen in evaluations of active learning classrooms, which is the common belief students' have when they are exposed to active learning environments: the instructor is not effective at teaching. Comments such as " instructor did not teach anything" is a prime example of student dissatisfaction as they encounter active learning classrooms and are faced with taking responsibility of their own learning (Lake, 2001). When students are faced with an engaging class, they rate the professor as incompetent and disorganized (Rivkin & Gim, 2013).

Rivkin and Gim researched how students perceive quizzes and problem solving activities during a traditional lecture class. The results highlight how students preferred lecture to the active learning strategies. Qualitative and quantitative data collected by the researchers highlight that students prefer traditional lectures. The students rated the lecture portion of the class as the preferred method of learning. In addition, qualitative data was organized by themes, in where lecture received more than fifty percent of the positive ratings commented by the students. A theme highlighted by the authors was how students emphasized that active learning activities

required them to spend time outside of class preparing for the activities. However, this was not a trend seen when students commented on traditional lectures. Although quizzes can have a positive impact in student learning, students rate them negatively. Students fail to understand the importance of engaging with course material therefore they do not value the activities and only focus on the extra work they have to do (Huxham, 2005). This poses a challenge for faculty because studies have found that student's rate professors who give them increased workload negative in final faculty evaluations, which can create problems for promotions and tenure (Covill, 2011). This can be a reason that faculty are reluctant to engage in active learning activities.

In active learning studies that use collaborative learning, the results show that students have a negative response to group work activities. A study by Hillyard, Gillespie, and Littig (2010) surveyed students to find their attitudes towards group work in their interdisciplinary arts and science program. A survey was administered at the beginning and end of the semester to assess students' view of group work. The results show that students who begin with a negative view towards group work are less likely to regard it as important. Both pre and post test scores showed forty-percent of the participants did not like group work and deemed it as unimportant in their learning. Although there was a moderately positive response to group work, students do not rate collaborative learning as a useful strategy in class. In addition, if students had a bad experience with group work before, their perception of group work did not change to a positive one. This poses a challenge to instructors who want to use collaborative learning in their class.

Much of the current research finds that students negatively evaluate professors who use engaging strategies. Negative feedback may discourage instructors who are trying to move away from traditional lectures. It is important to examine student perception of teaching style to

prepare faculty as they introduce active learning into their lectures. Analyzing the way students perceive teaching can help instructors apply different techniques in their courses to promote student success. Currently, research on student perception of active learning does not focus on Hispanic students. In addition to further explorations of perception of learning, it is important to examine how Hispanic students, specifically, respond to active learning since this population is growing and has seen increased enrollment in higher education (Contreras & Contreras, 2015).

Current Study

The current study will explore students' perception of active learning courses at a Hispanic Serving Institution, typically described as a university or college with at least 25% Hispanic undergraduate enrollment (U.S. Department of Education, 2011).

In the summer of 2014, a faculty development summer program in the southwestern university was offered to promote active learning activities in the classroom. The summer program, "Reaching the 21st Century Student Seminar 2014," was offered to all faculty, instructors and adjuncts. The program consisted of five, four-hour sessions, offered on Fridays during July 11 through August 8. The series covered the following topics: teaching millennial students, blended learning, flipped classrooms, and gamification. An expert in the topic facilitated each session and provided strategies that could be incorporated into different courses to promote active learning.

A cohort of twelve instructors attended the summer program and implemented self-selected strategies during Fall 2014. A total of thirty-four classes were modified with active learning activities, ranging from freshman seminars to graduate level courses. The activities implemented in the classroom included: group work and group discussion, and problem solving through pre- and post- class quizzes. These activities promoted active learning, allowing the

students to interact with the course material before, during, and after class. Engagement with course material allows the students to become responsible for their own learning.

To understand how students perceived active learning, a survey was administered after mid-semester break. The purpose of this mixed methods study is to understand how students in a Hispanic serving institution respond to various active learning strategies implemented in their course. In this study, the *Student Perception Survey* will be used to describe how students respond to active learning. Furthermore, students' perceptions will be explored by identifying themes in qualitative data gathered from the survey. The reason for combining quantitative and qualitative data is to better understand how students' view active learning with both attitudinal measures and detailed comments. The following questions frame this research:

1. How do Hispanic students respond to active learning courses?
2. What are students' perceptions of their active learning courses?

Drawing on previous findings of student perception studies, the main hypotheses to be tested are as follows:

1. Based on previous literature highlighting negative student perception of active learning classrooms, it is hypothesized that Hispanic students in this study will have an unfavorable response to active learning classrooms.
2. Based on the literature highlight student response to active learning instructors, it is hypothesized that students will have a negative response to instructors.
3. Based on literature highlighting differences in learning styles and group work preference between males and females, it is hypothesized that females will have a higher positive response to active learning courses than males.

4. In addition, it is hypothesized that females will have higher positive responses to active learning instructors than males.

In order to further examine how students perceive active learning classroom qualitative data will be examined to test students' conceptions of active learning. Open-ended questions will be explored to provide insight of students' perceptions of active learning strategies in the classroom.

METHODS

Research Design

This descriptive study used a self-report survey to gather data on Hispanic students enrolled in active learning courses. Data collection included qualitative and quantitative data, which strengthened data analysis. Quantitative data provides descriptive information regarding Hispanics students' attitudes toward active learning courses; furthermore, qualitative data provides additional information that cannot be obtained through a rating scale. Previous research on active learning studies often has combined rating scales and course evaluations, which allow researchers to provide a more complete picture of students' attitudes towards new teaching strategies (Lake, 2001; Covill, 2011; Rivkin & Gim, 2013).

Participants

Data was collected from students in courses with active learning activities, through an electronic survey sent in Fall 2014 semester, after mid-semester break. This data collection was part of an assessment performed by the Teaching and Learning Center of a southern university. A total of 15 courses, with a total of 966 students, were self-identified by the twelve instructors who participated in "Reaching the 21st Century Student Seminar 2014." Courses with multiple sections were counted as one class to efficiently manage data. Survey invitations were sent to each faculty with specific instructions to share the survey link with students in their courses.

Responses were gathered from students in 12 of the 15 courses. Out of the 966 students enrolled in the active learning courses surveyed, 491 opened the survey and 417 fully completed the questionnaire, a 43.17% completion rate (N=417).

Materials

A personalized email was sent to students informing them of the nature of the study, information of their rights as research participants, and a unique Student Perception Survey link (Appendix A). A request for consent to participate was included in the Student Perception Survey in the form of a question; participants acknowledged and provided consent in order to access the survey.

Measures

The *Student Perception Survey* was created to assess students' perception of an active learning course (Appendix B). This survey was newly developed for the current study, based on work by Frick, Chadha, Watson, Wang, and Green (2009); Gordon, Barnes, and Martin (2009); and Lake (2001). Although information regarding reliability and validity has not been reported on this specific measure, similar active learning perception studies have been able to show how students perceive different teaching environments through newly created assessments that focus on specific questions targeting their audience (Schelly, Davies, & Spooner, 2011; Lake 2001, Qualters, 2002; Rivkin & Gim, 2013).

The items in the *Student Perception Survey* examined students' perceptions of active learning course and instructor. In addition, 5 questions assessed the type of active learning activities in which students participated in the various courses. This resulted in the development of 21 attitudinal statements and 8 demographic questions. Students' perception of course and instructor was measured with the identified subscales: *Active Learning Course Rating Scale Instructor* and *Rating Scale*.

Active learning course rating. Thirteen questions focused on student perceptions of their active learning course. Eleven rating questions required responses on a 5-point Likert-type

scale, anchored by 1=strongly disagree to 5=strongly agree. Participants were asked "Please rate the following aspect of your course" and presented with the following statements: I find the format of this class (lecture, discussion, problem-solving) helpful to the way I learn; I feel this class format engages my interest; I think that I would learn better if a different format was used for the class (reverse coding); I find this class stimulates my interest in reading about this subject outside of class; Group-work activities have helped my learning; I learn better when the instructor recaps key ideas from a class session; I am motivated to learn in this class; I use feedback from instructor to improve my own work; This course is more engaging compared to other courses; This course has more engaging activities compared to other courses; I am more motivated to learn in this class than in my other classes. One of the statements required reverse coding since it was phrased to assess a negative position, while the rest of the survey questions were constructed using a positive phrasing. In order to correctly analyze responses to all the statements in the scale the statement was reverse coded before calculating.

In addition, 2 open-ended questions were included to examine what aspects of the course student's perceived contributed most to their learning and the questions provided students the opportunity to include additional comments regarding their active learning course. Three coders performed inductive category development on the open-ended questions and identified themes found in the data. Qualitative data results were compared with quantitative data to provide a further insight into students' perceptions of teaching strategies presented during the course.

Instructor rating. Eight questions focused on student ratings of active learning course instructor. Seven questions required ratings on 5-point Likert-type scale that ranged from 1=strongly disagree to 5=strongly agree. The question asked participants to rate the following statements: "Instructor demonstrated concern about whether students were learning; Instructor

inspired and motivated students' interest in course content; Instructor selected assignments that solidified learning; Instructor provides enough feedback; Instructor provided good group-work opportunities; I feel the instructor is effective in teaching the subject matter in this course; and Instructor made an effort to know who I am compared to my other courses."

In addition, one open-ended question was analyzed to identify how students qualitatively rated their active learning instructors. Responses to the question were broken down into categories by three coders to identify themes found in students' responses and compare them to the instructor rating.

Four additional questions were included as part of the assessment performed by Teaching and Learning Center; these questions assessed the specific types of active learning activities performed by the students. For this study, these questions will only be used to provide evidence of student participation in collaborative learning and quizzes as part of their active learning course.

Procedure

Participants received the survey invitation after mid-semester break, which provided them with ample time to participate in active learning strategies. The survey link was available to participants for a total of 4-weeks due to high number of students in the active learning courses. This timeline provided all participants reasonable length of time to answer the survey without interfering with their daily schedule. The survey contained a consent statement, which allowed participants to understand their role as a research participant. If the consent statement was accepted, the survey would enable the participants to continue answering the questions. This instrument was sent electronically, which enabled participants to complete the survey in their own personal computer devices, taking twenty minutes to complete. No incentive was

provided to the participants, and that their responses would remain anonymous. After the four-week mark, survey links were closed and no more surveys could be completed. Data from all course responses was combined in one file to prepare for data analysis.

Statistical Analysis

Quantitative phase. Based on the assessment performed by the Teaching and Learning Center, information was gathered on the type of activities performed by the students as part of their active learning course. All of the participants reported engaging in collaborative learning, with activities like jigsaw group-work, thinking-in-pairs, and problem solving in groups. In addition, participants engaged in quizzes, including quizzes before, during, and after class. Based on this data, this study focuses on collaborative learning and quizzes as the active learning activities performed in the courses surveyed. Quantitative and qualitative data were analyzed to provide insight into Hispanic students' perceptions of active learning environments and to enrich the current knowledge of attitudes toward active learning in higher education. Descriptive analyses were used to examine students' response to active learning classrooms through the Statistical Package for the Social Sciences (SPSS).

Following the procedure of Rivkin and Gim (2013) and Machemer and Crawford (2007), quantitative responses on the *Active Learning Scale* and *Instructor Scale* were grouped into two categories, agreement and disagreement, by combining responses of "Strongly Agree" and "Agree," and by combining "Strongly Disagree" and "Disagree", respectively. By grouping the scales responses into two categories, two-tailed binomial tests were used to examine if participants' positive and negative responses to active learning were significantly different. Significant results ($p \leq .05$) illustrate difference between the percentages of student responses regarding active learning that are either positive or negative. The predicted results, based on past

literature, included a significant difference in responses, with a higher percentage of "Disagree" responses. This would mean that a majority of the surveyed participants have negative attitudes towards their active learning course. Furthermore, *t*-tests were used to explore gender differences in perceptions of their active learning course and instructor. A significant difference was expected between responses of male and female Hispanic students in their perceptions of active learning.

Qualitative phase. Following the methodology of Virtanen and Lindblom-Ylänne (2010), this study analyzed the qualitative data with inductive category development. This method has been used to categorize data and map how respondents view the different topics (Mayring 2000). This process was selected in order to identify students' perception of active learning courses. By identifying these themes, student perceptions of active learning can be better understood. The qualitative data analysis process is as follows:

1. Researcher identifies preliminary categories as factors of learning based on the current data.
2. Coders will be presented with the data and instructions to review the data and identify main categories of students' responses (Appendix C).
3. Researcher and coders will discuss categories and subcategories until there is an agreement of themes.
4. Data will be coded independently based on the categories and subcategories selected.
5. Review of data and assigned category will be performed one last time. Final categories were analyzed. Percentages were created by dividing the number of category comments by the total number of responses.

This process was performed on both open-ended questions of the survey to fully understand student perceptions of active learning. Qualitative data analysis will provide support or negation to the quantitative results enabling triangulation of data analysis (Wei, Chesnut, Barnard-Brak, & Schmidt, 2014).

RESULTS

The purpose of this study was to examine the attitudes of Hispanic students towards active learning. The study examined quantitative and qualitative data to gather a more comprehensive picture of Hispanic students' perceptions of active learning courses to increase current knowledge of this population. A total of 417 respondents completed the survey (N=417). The majority of the participants were predominantly Hispanic (91.1%), first-generation students (55.4%). Of all the research participants, 236 were female (63.1%) and 153 were male (36.7%) respondents. In this sample, over half of participants identified themselves as freshman students (65%). Demographics are presented in Table 1.

Table 1
Demographics

	N	%		N	%
Gender			**First Generation**		
Female	263	63.1%	Yes	231	55.4%
Male	153	36.7%	No	183	43.9%
Other	1	.20%	No answer	3	.70%
Classification			**Race**		
Freshman	271	65%	White/Caucasian	17	4.1%
Sophomore	53	12.7%	Hispanic/Latino	380	91.1%
Junior	42	10.1%	Asian	17	1.9%
Senior	30	7.2%	No answer	12	2.8%
Graduate	17	4.1%			
No answer	4	1%			

Student Perceptions of Active Learning

Quantitative data[1]. Based on previous research, it was hypothesized that participants in this study would respond with negative feelings about active learning courses. In order to test this hypothesis, binomial tests were conducted to examine whether a majority of participants showed positive or negative views towards their active learning class. Binomial test can

[1] Additional quantitative analysis presented in Appendix D.

demonstrate if the difference between proportion of responses in one category versus proportion of responses in another category is statistically significant than the predicted 50%. Proportion of the *Active Learning Course Scale* and the *Instructor Rating Scale* were analyzed separately to examine differences between Disagree responses and Agree responses. Results for both scales are presented in Table 2 and Table 3.

Participants' response to active learning significantly indicated that the proportion of positive comments was higher than the expected value of 50% on 17 out of the 18 statements of the scales, with a p value of less than the alpha level .05 ($p < .000$). A hypothesized value of 50% was expected, since previous literature has less than 50% of their sample responding with positive responses to active learning. Furthermore, binomial tests can examine if responses to two categories are significant and not due to chance, a predicted value of 50:50 for Agree/Disagree categories.

Overall participants in this sample agreed that the course format was helpful to their learning (92%), group activities were helpful (86%), and format engaged their interest (88%). Furthermore, participants agreed that when compared to other courses, their active learning course was more engaging (89%), had more engaging activities (89%), and motivated them to learn (86%). With regards to active learning instructors, participants highly agreed that their instructor: demonstrated concern about their learning (92%), motivated their interest in course content (93%), selected assignments that helped their learning (94%), provided enough feedback (89%) and good group-work opportunities (91%), was effective in teaching course content (96%), and made an effort to know the students in the class (79%). Overall, results indicate that participants had a significant positive response towards active learning and their instructors.

Table 2
Binomial Test: Active Learning Course Scale

	N [*]	Agree [a]	Disagree [b]	Exact Sig.
I find the format of this class helpful to the way I learn	349	92%	8%	.000 [c]
I feel this class format engages my interest	343	88%	12%	.000 [c]
I think that I would learn better if a different format was used for this class[**]	274	51%	49%	.736
I find this class stimulates my interest in reading about this subject outside of class	295	81%	19%	.000 [c]
I learn better when the instructor recaps key ideas from the class session	339	96%	4%	.000 [c]
I am motivated to learn in this class	342	93%	7%	.000 [c]
I use feedback from instructor to improve my own work	318	94%	6%	.000 [c]
Group-work activities have helped my learning	317	86%	14%	.000 [c]
This course is more engaging compared to other courses	348	90%	10%	.000 [c]
This course has more engaging activities to other courses	336	89%	11%	.000 [c]
I am more motivated to learn in this class than in my other classes	331	86%	14%	.000 [c]

[*] N≠ 417 since *Neutral* and *Prefer not to answer* responses were omitted from binomial test.
[**]Scored in reverse order.
[a] Percentage calculated by combining strongly agree and agree responses.
[b] Percentage calculated by combining strongly disagree and agree responses.
[c] $p \leq .05$ for binomial test

Table 3
Binomial Test: Instructor Scale

Instructor demonstrated concern about whether students were learning	417	92%	8%	.000 [c]
Instructor inspired and motivated students' interest in course content	414	93%	7%	.000 [c]
Instructor selected assignments that solidified learning	413	94%	6%	.000 [c]
Instructor provides enough feedback	416	89%	11%	.000 [c]
Instructor provided good group-work opportunities	415	91%	9%	.000 [c]
I feel the instructor is effective in teaching the subject matter in this course	414	96%	4%	.000 [c]
Instructor made an effort to know who I am compared to my other courses	416	79%	21%	.000 [c]

Table 3 Continued
Binomial Test: Instructor Scale

[*] N≠ 417 since *Neutral* and *Prefer not to answer* responses were omitted from binomial test.
[a] Percentage calculated by combining strongly agree and agree responses.
[b] Percentage calculated by combining strongly disagree and agree responses.
[c] $p \leq .05$ for binomial test

While the majority of the quantitative results do not support the current study's hypothesis, there were two significant questions in the *Active Learning Course Scale* that highlight participants' mixed views on active learning. Participants' response to " I think that I would learn better if a different format was used for this class," had no statistically significant results (p =.74); indicating that students have mixed views on the effectiveness of active learning. In addition, the statement "I learn better when instructor recaps ideas from the lesson" shows that a significant majority of students (96%) hold the instructor as the central factor for their learning. Covill (2011) had similar results, where students reported heavily relying on the instructor to provide them with the knowledge needed for the course. These results are in line with a common finding in active learning research, which is that students do not acknowledge that the development of independent ideas and learning requires their engagement with course material.

Qualitative data. Qualitative data presents additional insight and provides a deeper understanding of how students perceive active learning. A majority of students (47%, N=183) find the active learning activities helpful to their learning; students identified group work, pre and post quizzes, and in-class problem solving helpful to their learning. Participants' responses highlight the positive outcome of collaborative learning activities; comments such as: "*What contributed the most to my learning was the group activities because I learn better this way.*" and *"Being able to sit and think with my peers contributes to my learning"* are a couple of examples that show support for collaborative learning. Quizzes were also perceived as a helpful

activity in the classes; students felt that these assignments helped them prepare for lecture. Comments such as "*I learned because it was required for us to read the chapters prior to lecture due to in-class quizzes"* and "*Pre assessment is also good because I can get an idea of what will be in the next lecture"* illustrate how quizzes helped students prepare for class. In addition, responses showed that students also believed the instructor played a key role in their process of learning (35%, N=138). Comments such as *"instructors support," "the motivations the teacher has and shows,"* and *"My instructor is very caring, she goes the extra mile for all her student's overall success"* were common in student responses.

The data showed that students' have a positive response to the activities performed in class, and to the instructor teaching the active learning course. An interesting finding was that participants in this sample mentioned intrinsic motivators that helped them learn course material. For example, a total of 18% of participants (N=69) mentioned that tutoring, self-made study groups, supplemental session reviews, and their own reading helped them learn course material. These responses were not expected, but provide new insight into outside activities that help Hispanic students learn. Categories of student responses are presented in Table 4.

Inductive category development was also performed on the comments provided by participants to the question "Do you have any additional comments about this course or instructor?" A total of 60% of responses were categorized as positive and 40% as negative towards instructor and course, results are presented in Table 5. Participants had positive comments about the professor's personality and assignments performed throughout the class, these results support the results found in the quantitative analysis. For example, participants said: "*This course may be difficult but the instructor finds ways to make it easier to*

comprehend," "I really enjoy his diverse way of presenting ideas," "I love that (instructor) loves his job and wants to help his students learn and be engaged during and outside of class", and *"this subject is very interesting and the professor was very informative and seemed to enjoy what she taught,"* displaying positive feelings towards their instructor and course.

Table 4
A Summary of Categories Identified to Contribute to Student Learning

Category	Sub-Category	N	%
Activities		**183**	**47%**
	Quizzes and in-practice problems	47	13%
	Group work /Discussion	88	23%
	Technology (online assignments)	48	12%
Instructor		**135**	**35%**
	Knowledge	35	9%
	Personality	45	12%
	Feedback	4	1%
	Lecture/PowerPoint Presentations	51	13%
Self-Motivation		**69**	**18%**
	Interest in course	27	7%
	Supplemental Instruction/Tutors	8	2%
	Study groups	9	2%
	Reading	25	6%

N=390

Although participants found activities as helpful to their learning and had positive comments towards the course, student resistance was evident in the qualitative data. Forty percent of responses were coded as negative feedback towards instructor, course format, and the amount of material covered. Comments such as: *"I prefer more lecture and less independent work," "If less time in class could be spent in waiting for other students to answer the questions rather than the teacher more frequently explain with expertise and wisdom.. solidification of ideas would be more effective,"* and *"..Amazing teacher, but the online portion does not help me learn. I prefer when he explains and lectures because he gives examples and connects everything, which makes me retain information better*" exemplify student struggle with active

learning. These results reveal students' dislike of active learning. The responses highlighted how students prefer the instructor to lecture and provide them with all the information needed. These findings were consistent with the misconception students have of their role as learners.

Table 5
Summary of Comments about Course or Instructor

Response	Category	N	%
Positive Responses		**84**	**60%**
	Instructor	64	46%
	Course Format	20	14%
Negative Responses		**55**	**40%**
	Instructor	17	12%
	Course Format	26	19%
	Time	12	9%

N=139

The findings from qualitative and quantitative data show that although there was a majority of positive responses to active learning activities; a small portion of students were not satisfied that instructors moved away from traditional lectures. In this sample, a majority of students' responded favorably to the instructor teaching the active learning course. Nevertheless, active learning seems to be a challenge for a smaller portion of students, who report negative feelings towards the course format.

Gender Differences

Quantitative data. In order to evaluate gender differences, independent t-tests were conducted to evaluate differences in the responses of males and females with regards to course and instructor. Scale results were averaged in order to analyze the scale as a whole. Results for scales are presented in Table 6 and Table 7.

Female participants did not have higher scores (M = 3.66, SD = .68), than male participants towards their active learning course (M =3.27, SD = .58), t (414)= 1.31, p =.19. The results show that there are no significant differences between the attitudes of females and males

towards active learning classrooms. Students' response to active learning falls in the middle of the disagree-agree continuum, showing mixed views towards active learning for both genders. The results do not support the predicted hypothesis that female participants would have a higher positive response to active learning classrooms.

Table 6

T-Test Results Active Learning Course Scale

	N	Mean	Std. Dev.	t	df	p
Females	263	3.66	.68	1.31	414	.19
Males	153	3.57	.58			

Table 7

T-Test Results Instructor Scale

Females	263	4.03	.87	2.12	414	.02 *
Males	153	3.84	.76			

* $p < .05$

The t-test results on the Instructor Scale revealed significant gender differences. Female participants had higher scores ($M = 4.03$, $SD = .87$) than male participants in their rating of course instructor ($M = 3.84$, $SD = .76$), $t\ (414) = 2.12$, $p = .02$. Results for the t-test partially support the predicted hypothesis on gender differences. Females' students rated instructors significantly more positively than males.

Furthermore, female students had more positive responses to their instructor than males in the open-ended responses. A trend found in the qualitative data was that female participants had a higher number of positive comments, whereas males' had almost equal amounts of negative and positive comments (Figure 1).

Nevertheless, there were no gender differences in attitudes towards the active learning class. Mean for females and males fall in the middle of the agree-disagree continuum, 3.66 and 3.57 respectively, illustrating participants' mixed feelings towards active learning courses. In

addition, both genders had an almost equal number of negative comments that centered on the course format. For example, *"This class does not engage me and I find myself lost," "Sometimes the method of teaching is not the most efficient one", "I have wasted my tuition on some (sic) computer system to teach me"* were comments from both males and females regarding the course. Although there was positive feedback from participants towards the class, there was some resistance found in this sample of students.

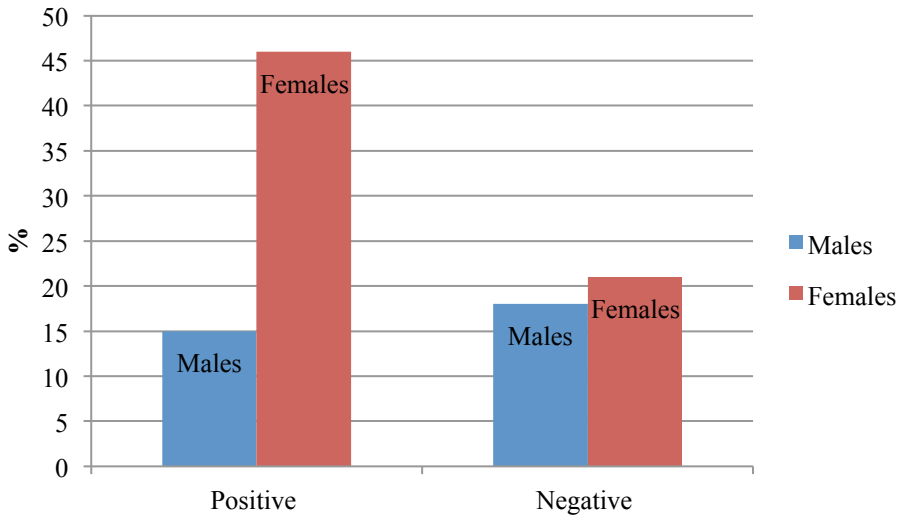

Figure 1: **Positive/negative comments**

Summary of Findings

To summarize, findings suggested that the predicted hypotheses were partially incorrect. There was student resistance towards the active learning course surveyed; however, the majority of the participants had a positive response towards the course and the instructor. Findings of interest in this study are the positives response participants had about their active learning courses. Contrary to previous literature, findings showed that this sample of Hispanic students responded favorably towards activities performed during class, mainly collaborative work and assessments. In addition, participants had very positive comments towards the instructors

teaching the courses, which is different from what previous research had found. In addition, t-test results partially supported the hypothesis that females have higher positive response towards active learning. The results demonstrated that females had higher positive ratings about the instructor. However, results towards the course were not significantly different, indicating that both genders had mixed responses towards the course. Qualitative data supports the finding of quantitative data: although there was a positive response towards the course and instructor, some students struggled with the methods of teaching in active learning. This resistance was similar to findings from previous studies on active learning. Hosal-Akman and Simga-Mugan (2010) point out that student dissatisfaction in active learning can be caused by "students not being ready for such an environment as traditional teaching methods have dominated their environment" (pg. 258-259). Qualitative data hints towards this, as students mention not liking some aspects of the course.

DISCUSSION

Active learning research underlines the positive impact on student learning in higher education. Although active learning has positive outcomes on learning, instructors are faced with student dissatisfaction as they shift from the traditional lecture. Various studies have identified student resistance as instructors implement new strategies in the classroom (Lake, 2001; Luntungan, 2012; Machemer & Crawford, 2007). The purpose of this study was to understand how Hispanic college students respond to active learning classrooms. In the last decade, enrollment of Hispanic students has steadily increased; however, graduation rates are still low for this population (Contreras & Contreras, 2015; Fry & Taylor, 2013). Much information is needed on successful teaching strategies to help Hispanic students complete their post-secondary education. Although there is research on active learning, little research has focused on how this pedagogy is perceived by Hispanic students.

Findings in this study indicated that Hispanic students tended to have a positive response towards active learning. The self-report survey data highlighted that Hispanic students have a positive outlook towards active learning; in this sample over 80% of participants responded favorably to their classes and instructors. Furthermore, qualitative responses highlighted an interesting finding of this study. The results showed that participants viewed collaborative learning as a good strategy where they could share their knowledge and ideas with their peers and they had a positive outlook towards assessment used in active learning courses. These results differ from past active learning literature and may be explained by cultural differences in the sample of this study and the samples found in previous research. According to Holleran and Waller (2003), collectivism, the practice of working together instead of working as an individual, is a main value of the Hispanic culture. Collectivism may explain why Hispanic students see

collaborative learning as a positive activity in their active learning course. Participants' responses highlighted how comfortable they felt talking to their peers, sharing their ideas, and engaging in projects as a group. In previous research, where the majority of participants were Caucasian, who may identify as individualistic, collaborative learning may be difficult and lead to dissatisfaction as students engage in this activity.

Another interesting finding in this study was the high positive response to active learning instructors. According to previous literature, students in active learning courses rate their instructors negatively due to the increased level of work they had to perform. The participants in this study showed a very positive response to the instructors using active learning strategies. Covill (2011) points out that students may judge instructor's effectiveness if they enjoy the course. In this sample, students rated their instructor as effective and emphasized how their instructor motivated them to learn. The perceptions of the role of instructor among Hispanic students can be further explored to find how they impact student learning.

Although there was a strong positive response, student resistance was present in this sample. Qualitative data showed the struggle that Hispanic students face in their active learning course. Although they seemed to respond with positive feelings towards the instructor, there are aspects of the course that students would like to change. The comments provided by participants show that they are place a big emphasis on the instructors' role as they learn material. This can be observed in the strong response to "I learn better when the instructor recaps ideas from the lesson," over 90% of participants agreed to this statement. Furthermore, agreement with the comment *"if less time in class could be spent in waiting for other students to answer the questions rather than the teacher more frequently explain with expertise and wisdom on the simplest way to approach concepts and key ideas, solidification of ideas would be much more*

effective." highlighted the misconception students have about the instructor's role. Constructivism theory highlights the importance of engagement with new knowledge to create and strengthen learning connections. Literature demonstrates that students have a difficult time understanding the purpose behind active learning activities, especially since these activities may be uncommon and students believe the instructor's role to be the main source of information as they learn course material (Blignaut, 2014; Hains & Smith, 2012). Findings from the current study showed that Hispanic students may fail to understand their role as a learner, which is congruent to what other studies have found about active learning strategies.

The results of this study demonstrate that Hispanic students respond favorably towards active learning. However, students have difficulty adapting to the new teaching style, which can become a challenge as faculty transition from traditional lectures to active learning. The dissonance can be due to the expectation students have of learning, since students are used to being a passive participants in the classroom, and new teaching methods can create dissatisfaction. Covill (2011) points out that a majority of students believe that traditional lectures are engaging and provide them with adequate learning opportunities. Students do not realize that passive engagement with course material is subpar when compared with active engagement. Due to this misconception of learning, when students are faced with new learning strategies, they may view them as inadequate and impractical. Since research has reported the positive effects of active learning, faculty and institutions should not be discouraged by the negative perceptions of students. Huxham (2005) points out that due to the fallacies students have of their role as learning, what they prefer in terms of teaching may not be best for their long-term learning. A possible solution can be to educate students as to the purpose behind the

activities of active learning to help them understand the importance of engagement rather than the current passive role they accept.

It is important to note the limitations of the current study. First, the materials used in this study had not previously been tested; future studies on Hispanic students may benefit from using research materials that have valid and reliable results. Overall, active learning research can focus on finding research material that can be used in various populations and with different instruction methods, since currently pedagogy research varies in their research materials. In addition, there was a lack of follow-up clarification to the open-ended comments, which restricts the knowledge gathered from participants. In this study, participants were not required to provide responses to the open-ended questions, which oftentimes resulted in one-word answers that may have been further explored to fully understand participants' views. Interviews of focus groups could provide additional qualitative data, allowing participants to expand on their perceptions of active learning.

Although this was a descriptive study, the results can be a starting point for future research on Hispanic students and active learning. This sample included a majority of freshman responses; future research can try to have equal number of participants from other classifications to observe differences between them. In addition, this study did not explore the relationship between active learning and impact in grades or GPA. Future research can explore relationship between active learning and Hispanic students' grades.

The findings of this study provide a look at Hispanic students in higher education and the active learning strategies that may improve their academic success. Based on the results, educators can modify their lectures to incorporate active learning activities that are suitable for Hispanic students.

REFERENCES

Blignaut, S. E. (2014). Reflections on student resistance to a constructivist curriculum. *Education as Change*, *18*, 271-283.

Campbell, J., & Mayer, R. E. (2009). Questioning as an instructional method: Does it affect learning from lectures? *Applied Cognitive Psychology*, *23*, 747-759. http://dx.doi.org/10.1002/acp.1513

Contreras, F., & Contreras, G. J. (2015). Raising the bar for Hispanic serving institutions: An analysis of college completion and success rates. *Journal of Hispanic Higher Education*, *14*, 151-170. http://dx.doi.org/ 10.1177/1538192715572892

Covill, A. E. (2011). College students' perceptions of the traditional lecture method. *College Student Journal*, *45*, 92-101.

Cunningham, D., & Duffy, T. (1996). Constructivism: Implications for the design and delivery of instruction. In D. H. Jonassen (Ed.)*, Handbook of Research for Educational Communications and Technology: A Project of the Association for Educational Communications and Technology* (pp.170-198). Macmillam Library Reference.

Felder, R. M., & Brent, R. (1996). Navigating the bumpy road to student-centered instruction. *College Teaching*, *44*, 43-47.

Fisher, A. T., Alder, J. G., & Avasalu, M. W. (1998). Lecturing performance appraisal criteria: Staff and student differences. *Australian Journal of Education*, *42*, 153-168.

Frick, T. W., Chadha, R., Watson, C., Wang, Y., & Green, P. (2009). College student perceptions of teaching and learning quality. *Educational Technology Research and Development*, *57*, 705-720. http://dx.doi.org/10.1007/s11423-007-9079-9

Fry, R., & Taylor, P. (2013). *Hispanic high school graduates pass whites in rate of college enrollment*. Pew Research Hispanic Trends Report. Retrieved from http://www.pewhispanic.org/files/2013/05/PHC_college_enrollment_2013-05.pdf

Gier, V. S., & Kreiner, D. S. (2009). Incorporating active learning with PowerPoint-based lectures using content-based questions. *Teaching of Psychology*, *36*, 134-139. http://dx.doi.org/10.1080/00986280902739792

Hains, B. J., & Smith, B. (2012). Student-centered course design: Empowering students to become self-directed learners. *Journal of Experiential Education, 35*, 357-374. http"//dx.doi.org/ 10.1177/105382591203500206

Hillyard, C., Gillespie, D., & Littig, P. (2010). University students' attitudes about learning in small groups after frequent participation. *Active Learning in Higher Education*, *11*, 9-20. http://dx.doi.org/ 10.1177/1469787409355867

Holleran, L. K., & Waller, M. A. (2003). Sources of resilience among Chicano/a youth: Forging identities in the borderlands. *Child and Adolescent Social Work Journal*, *20*, 335-350. http://dx.doi.org/ 10.1023/A:1026043828866

Hosal‐Akman, N., & Simga‐Mugan, C. (2010). An assessment of the effects of teaching methods on academic performance of students in accounting courses. *Innovations in Education and Teaching International*, *47*, 251-260. https://dx.doi.org/ 10.1080/14703297.2010.498176

Huxham, M. (2005). Learning in lectures: Do 'interactive windows' help?. *Active Learning in Higher Education*, *6*, 17-31.https://dx.doi.org/10.1177/1469787405049943

Jungst, S., Wiersema, J., & Licklider, B. (2003). Providing support for faculty who wish to shift to a learning-centered paradigm in their higher education classrooms. *Journal of the Scholarship of Teaching and Learning*, *3*, 69-81.

Lake, D. A. (2001). Student performance and perceptions of a lecture-based course compared with the same course utilizing group discussion. *Physical Therapy*, *81*, 896-902.

Lammers, W. J., & Murphy, J. J. (2002). A profile of teaching techniques used in the university classroom: A descriptive profile of a U.S. public university. *Active Learning in Higher Education*, *3*, 54-67. https://dx.doi.org/ 10.1177/1469787402003001005

Lea, S. J., Stephenson, D., & Troy, J. (2003). Higher education students' attitudes to student-centered learning: Beyond 'educational bulimia'?. *Studies in Higher Education*, *28*, 321-334. https://dx.doi.org/ 10.1080/03075070309293

Lonka, K., & Ahola, K. (1995). Activating instruction: How to foster study and thinking skills in higher education. *European Journal of Psychology of Education*, *10*, 351-368. https://dx.doi.org/ 10.1007/BF03172926

Luntungan, R. (2012). Effects of teaching methods and students' attitude on academic performance. *International Forum Journal, 15,* 42-56.

Machemer, P. L., & Crawford, P. (2007). Student perceptions of active learning in a large cross-disciplinary classroom. *Active Learning in Higher Education*, *8*, 9-30. https://dx.doi.org/ 10.1177/1469787407074008

Mangold, K. (2007). Educating a new generation: Teaching baby boomer faculty about millennial students. *Nurse Educator*, *32*, 21-23.

Mayring, P. (2000). Qualitative content analysis. *Forum: Qualitative Social Research*, *1*, n.p.

Narloch, R., Garbin, C. P., & Turnage, K. D. (2006). Benefits of prelecture quizzes. *Teaching of Psychology*, *33*, 109-112. https://dx.doi.org/10.1207/s15328023top3302_6

Poirier, C. R., & Feldman, R. S. (2007). Promoting active learning using individual response technology in large introductory psychology classes. *Teaching of Psychology*, *34*, 194-196. https://dx.doi.org/10.1080/00986280701498665

Prince, M. (2004). Does active learning work? A review of the research. *Journal of Engineering Education*, *93*, 223-231.

Qualters, D. M. (2002). Do students want to be active? *Journal of the Scholarship of Teaching and Learning, 2,* 51-60.

Rivkin, A., & Gim, S. (2013). Student preferences regarding teaching methods in a drug-induced diseases and clinical toxicology course. *American Journal of Pharmaceutical Education*, *77*, n.p. https://dx.doi.org/10.5688/ajpe776123

Sanders, B. R. 1998. The learning revolution in higher education. Satellite down link produced by R. Jan LeCroy Center for Educational Telecommunications, Dallas County Community College District. Presented by PBS Adult Learning Satellite Service, January 29, 1998.

Schelly, C. L., Davies, P. L., & Spooner, C. L. (2011). Student perceptions of faculty implementation of Universal Design for Learning. *Journal of Postsecondary Education and Disability*, *24*, 17-30.

Schul, J. E. (2011). Revisiting an old friend: The practice and promise of cooperative learning for the twenty-first century. *The Social Studies*, *102*, 88-93. https://dx.doi.org/10.1080/00377996.2010.509370

Stump, G. S., Hilpert, J. C., Husman, J., Chung, W. T., & Kim, W. (2011). Collaborative learning in engineering students: Gender and achievement. *Journal of Engineering Education*, *100*, 475-497. https://dx.doi.org/10.1002/j.2168-9830.2011.tb00023.x

U.S. Census. (2012). *College Enrollment by Sex, Age, Race, and Hispanic Origin: 1980 to 2009.* Retrieved from http://www2.census.gov/library/publications/2010/compendia/statab/130ed/tables/11s0277.pdf

U.S. Department of Education. (2011). *Title V Developing Hispanic-Serving Institutions Program - Definition of an HSI.* Retrieved from http://www2.ed.gov/programs/idueshsi/index.html

Virtanen, V., & Lindblom-Ylänne, S. (2010). University students' and teachers' conceptions of teaching and learning in the biosciences. *Instructional Science*, *38*, 355-370.

Wei, T., Chesnut, S. R., Barnard-Brak, L., & Schmidt, M. (2014). University students' perceptions of academic cheating: Triangulating quantitative and qualitative findings. *Journal of Academic Ethics*, *12*, 287-298.

APPENDIX A

STUDENT EMAIL

This email was approved to request participation in research that has been approved or declared exempt by the Texas A&M International University Institutional Review Board (IRB).

The Teaching and Learning Center invites you to participate in a study that research student's perceptions of teaching strategies. During the summer of 2014, your instructor participated in a Professional Development Seminar that focused on new teaching strategies, your responses will help identify if these teaching strategies have a positive impact on learning.

Please read the following information explaining your rights as a research participant.

1. You will be asked to complete a 24-question online survey two times: at this moment and at the end of the semester. This survey will focus on activities and class engagement. The survey should take no more than 15 minutes to complete.
2. There is no anticipated risk to you for participating in this study. To ensure your anonymity IP address tracking will be disabled. In addition, you will not be asked to provide any identifiable information.
3. There is no direct benefit for your participation, but your feedback will help faculty improve their teaching.
4. You will not be compensated for participating in this study; your instructor will not provide any incentive nor penalize you for your participation.
5. Participation is voluntary; you may refuse to participate in the study. You have the right not to answer questions you don't feel comfortable with, by selecting "Prefer not to answer". If you agree to participate you are free to withdraw at any time without any consequence.

This project was approved by the IRB on October 21, 2014. Questions or concerns about the research and participants' rights should be directed to IRB chair, Dr. Jennifer Coronado at irb@tamiu.edu or 956-326-2673.

Questions about this research should be addressed to Dr. Marcela Uribe to marcela.uribe@tamiu.edu or 956-326-3133.

Thank you for considering this research opportunity.

Please follow the link to start the survey:
https://www.surveymonkey.com/s/studentperception2014

APPENDIX B

STUDENT PERCEPTION SURVEY

You are being invited to participate in a research study titled "Student and Faculty Perceptions of Teaching Strategies." This study is being done by the Teaching and Learning Center at this southern university. You were selected to participate in this study because your instructor participated in a professional development seminar during summer 2014.

The purpose of this research study is gather student perceptions of faculty teaching and classroom engagement. If you agree to take part in this study, you will be asked to complete an online survey/questionnaire. This survey/questionnaire will ask about your thoughts on the class instructed by and it will take you approximately 15 minutes to complete.

You may not directly benefit from this research; however, we hope that your participation in the study helps The Teaching and Learning Center design better professional opportunities and your instructor to improve in his/her teaching strategies.

We believe there are no known risks associated with this research study; however, as with any online related activity the risk of a breach of confidentiality is always possible. To the best of our ability your answers in this study will remain anonymous. We will minimize any risks by disabling IP address tracking. Your responses are anonymous and no identifiable information will be collected. If you are not comfortable answering any question, please check "Prefer not to answer" or write NA on open ended questions. You have the freedom to withdraw at any moment if you feel uncomfortable answering this questionnaire.

If you have questions about this project or if you have a research related problem, you may contact the researchers Dr. Marcela Uribe (marcela.uribe@tamiu.edu or 3263133) or Ms. Cihtlalli Perez (Cihtlallig.perez@tamiu.edu).

If you have any questions concerning your rights as a research subject, you may contact the IRB Chair, Dr. Jennifer Coronado, (irb@tamiu.edu or 326-2673). By clicking “I agree” below you are indicating that you are at least 18 years old, have read and understood this consent form and agree to participate in this research study. Please print a copy of this page for your records.

1. Do you agree to participate in this study?
    - o I Agree
    - o I Do Not agree

2. What is your classification?
    - o Freshman
    - o Sophomore
    - o Junior
    - o Senior
    - o Graduate
    - o Prefer not to answer

3. What is your major?

   ☐

   - Prefer not to answer

4. What is your overall GPA? (i.e. If you have a 3.0 insert 0 next to the 3)

   -

4.	
3.	
2.	
1.	

   - Prefer not to answer

5. What is your course section number for XYZ class?

   ☐

   - Prefer not to answer

6. How many classes are you taking this semester?
   - 1
   - 2
   - 3
   - 4
   - 5
   - 6
   - Prefer not to answer

7. Are you a first generation college student?

(A first generation students is a student whose parents do not have a college degree)

   - Yes
   - No
   - Prefer not to answer

8. Would you describe yourself as:
   - White/Caucasian
   - Black/African American
   - American Indian/Native American
   - Asian
   - Hispanic/Latino
   - Pacific Islander
   - Other (please specify)

     ☐

   - Prefer not to answer

9. Gender

- Prefer not to answer

10. Predominant pedagogy used in your XYZ class?
    - Lecture
    - Lecture and class discussion
    - Lecture and small group discussion
    - Lecture and student presentation
    - Group work
    - Prefer not to answer
    - Other (please specify)

11. How many students are in your xyz class?
    - Between 0-49
    - Between 50-99
    - Between 100-149
    - 150+
    - Prefer not to answer

12. Please compare THIS course to other course you are taking this semester.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Prefer not to Answer
This course is more engaging	○	○	○	○	○	○
This instructor made an effort to know who I am	○	○	○	○	○	○
This course has engaging activities	○	○	○	○	○	○
I am more motivated to learn in this class than in my other classes	○	○	○	○	○	○

Course Activities

Please read the instructions carefully, and only think about this course when answering the following questions. If you do not wish to answer a question, please select "Prefer not to answer".

13. Have you done any of the following in-class activities?
    - 25-word summary
    - Introduction activities/ice-breakers
    - Games
    - Prefer not to answer

14. Do you do the following group activities in this class?
    - Jigsaw group work

- Thinking in pairs
- Problem solving in groups
- Angel groups
- Prefer not to answer

15. Does your professor engage you in the following in-class technologies?
    - Today's Meet
    - Top Hat
    - Poll Everywhere
    - Videos during class
    - Prefer not to answer

16. Have you used these technologies outside of class? (Only think about this class when answering this question.)
    - Online office hours
    - Assigned videos before class
    - Assigned videos after class
    - Online tests and quizzes
    - SOCRATIC program
    - Feedback from instructor via video
    - ALEKS
    - Prefer not to answer

17. Does your instructor grade with the following activities?
    - Pre-class quizzes
    - Post-class quizzes
    - Selection of work level/difficulty (gamification)
    - Feedback clarification by video
    - Extra-credit activities
    - Creating quiz bank questions as a class
    - Prefer not to answer

Course Activities

Please read the instructions carefully, and only think about this course when answering the following questions. If you do not wish to answer a question, please select "Prefer not to answer".

18. Please rate the following aspects of your course.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Prefer not to Answer
I find the format of this class (lecture, discussion, problem solving) helpful to the way I learn.	○	○	○	○	○	○
I feel this class format engages my interest	○	○	○	○	○	○

I think that I would learn better if a different format was used for the class	○	○	○	○	○	○
I find that this class stimulates my interest in reading about this subject outside of class	○	○	○	○	○	○

19. Please rate your instructor in the following statements.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Prefer not to Answer
I learn better when the instructor recaps ideas from a class session.	○	○	○	○	○	○
Instructor demonstrated concern about whether students were learning	○	○	○	○	○	○
Instructor inspired and motivated student's interest in course content.	○	○	○	○	○	○
Instructor selected assignment that solidified learning.	○	○	○	○	○	○
Instructor provides enough feedback	○	○	○	○	○	○
Instructor provided good group-work opportunities	○	○	○	○	○	○

20. Please select the answer that best matches your evaluation of the following statements:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Prefer not to Answer
I am motivated to learn in this class.	○	○	○	○	○	○
I use feedback from instructor to improve my own work.	○	○	○	○	○	○
I evaluate my own work.	○	○	○	○	○	○
I feel the instructor is effective in teaching the subject matter in this course	○	○	○	○	○	○
Group-work activities have helped my learning	○	○	○	○	○	○
I feel comfortable speaking in this class.	○	○	○	○	○	○

21. What contributed most to your learning in this course?

22. My current grade in this course is:
    - A
    - B
    - C
    - D
    - F
    - Prefer not to answer

23. The average grade in my other courses is:
    - A
    - B
    - C
    - D
    - F
    - Prefer not to answer

24. Do you have any additional comments about this course or instructor?

Thank you for taking the time to complete the survey!

APPENDIX C

CODING INSTRUCTIONS

Part 1

Thank you for helping me code the following responses. Your help will help my analyze data regarding participants' comments. As per your *Conduct of Research* training, I ask that you do not divulge this information, as it is confidential. I am asking that you follow the instructions below and meet with me in order to analyze qualitative data.

Please open the excel file titled "Question 21". This file contains the responses that will be analyzed. This study is aimed at understanding how students perceive active learning. You will look at responses to the following question: What contributed most to your learning in this course?

The aim of this data analysis is to find the main factors that contribute to student learning based on participants' responses.

Please read the responses and try to categorize each response into groups. You can do this by writing down the category in Column B.
The following groups have been identified as main themes.

- Instructor
- Technology
- Lectures
- In-class activities
- Student Work
- Self motivation

*If you find a different theme not listed above, please highlight the cell and write the theme in Column B.

After you have coded the data, we will meet and discuss the factors found and come to a consensus of them. The coding will be repeated with agreed categories, one final time.

If you need additional information, please do not hesitate to ask me.

Part 2

Open excel file titled "Question 24" which provided participants the opportunity to provide additional comments about their course. Please read the responses and categorize responses into groups.

Based on preliminary categorization, data can by analyzed in the following themes:

- Positive comment
- Negative comment

*If you find a different theme not listed above, please highlight the cell and write the theme in Column B.

After you have coded the data, we will meet and discuss the factors found and come to a consensus of them. The coding will be repeated with agreed categories, one final time.

If you need additional information, please do not hesitate to ask me.

APPENDIX D

ADDITIONAL QUANTITATIVE DATA ANALYSIS

The following data analysis was performed based on the suggestions of the thesis committee to further explore quantitative data. Due to the high positive student response towards active learning in the binomial tests, a cross-tabulation was analyzed to find if significant differences in the responses when the "Neutral" category is added to the data analysis. SPSS was used to perform the cross tabulation analysis.

Analysis for the *Instructor Scale* show that two statements have significant results between gender and agreement that instructor demonstrated concern whether students were learning and instructor is effective in teaching the subject matter. For these statements, females had higher agreement responses than males. These results could be used to further explore the relationship between female Hispanic students and their instructor. None of the statements for the *Active Learning Scale* have any significant association between gender and questions presented. As the binomial test found, there was no significant difference between males and females with regards to their perceptions towards active learning. Both results found that there are no gender differences regarding student perceptions towards active learning course activities. The only significant difference was found in the Instructor Scale, with females responding with higher positive feelings.

The cross-tabulation results do not vary from the binomial test performed in the original data analysis. Results show that the responses by participants have high percentages in the "Agree" category. For all of the statements in both scales, "Agree" has more than 55% of answers, which indicates that the majority of Hispanic students in this sample responded with positive attitude towards the active learning course. These results also portray the resistance found in Hispanic

students, since the percentages are not higher than 83.3%. Cross-tabulation results are presented in the following tables.

Instructor Scale

Instructor demonstrated concern about whether students were learning.	Females		Males		Total		Pearson Chi Square
	n	%	*n*	%	*n*	%	
Agree	211	80.2%	110	71.9%	321	77.2%	.03*
Neutral	31	11.8%	31	20.3%	62	14.9%	
Disagree	16	6.1%	12	7.8%	28	6.7%	
No Answer	5	1.9%	0	0%	5	1.2%	
Total	263		153		416		

Instructor inspired and motivated students interest in course content	Females		Males		Total		Pearson Chi Square
	n	%	*n*	%	*n*	%	
Agree	204	78.2%	108	71.1%	321	75.5%	.23
Neutral	39	14.9%	34	22.4%	73	17.7%	
Disagree	14	5.4%	9	5.9%	23	5.6%	
No Answer	4	1.5%	1	0.7%	5	1.2%	
Total	261		152		413		

Instructor selected assignment that solidified learning	Females		Males		Total		Pearson Chi Square
	n	%	*n*	%	*n*	%	
Agree	209	80.1%	109	72.2%	318	77.2%	.28
Neutral	37	14.2%	30	19.9%	67	16.3%	
Disagree	11	4.2%	10	6.6%	21	5.1%	
No Answer	4	1.5%	2	1.3%	6	1.5%	
Total	261		151		412		

Instructor provides enough feedback	Females		Males		Total		Pearson Chi Square
	n	%	*n*	%	*n*	%	
Agree	191	72.6%	104	68.4%	295	71.1%	.18
Neutral	50	19%	31	20.4%	81	19.5%	
Disagree	18	6.8%	17	11.2%	35	8.4%	
No Answer	4	1.5%	0	0%	4	1.0%	
Total	263		152		415		

Instructor provided good group-work opportunities	Females		Males		Total		Pearson Chi Square
	n	%	*n*	%	*n*	%	
Agree	199	75.7%	112	74.2%	311	75.1%	.36
Neutral	39	14.8%	26	17.2%	65	15.7%	
Disagree	17	6.5%	12	7..79%	29	7.0%	
No Answer	8	3.0%	1	0%	9	2.2%	
Total	263		151		414		

I feel the instructor is effective in teaching the subject matter in this course	Females		Males		Total		Pearson Chi Square
	n	%	*n*	%	*n*	%	
Agree	263	63.9%	66	43.4%	234	56.4%	.00*
Neutral	58	22.1%	53	34.9%	111	26.7%	
Disagree	33	12.5%	31	20.4%	64	15.4%	
No Answer	4	1.5%	2	1.3%	6	1.4%	
Total	263		152		415		

Instructor made an effort to know who I am compared to my other courses	Females		Males		Total		Pearson Chi Square
	n	%	*n*	%	*n*	%	
Agree	221	85.0%	123	74.2%	344	83.3%	.41
Neutral	24	9.2%	21	17.2%	45	10.9%	
Disagree	9	3.5%	7	7.79%	16	3.9%	
No Answer	6	2.3%	2	0%	8	1.9%	
Total	260		153		413		

* $p < .05$

Active Course Scale

I find the format of this class helpful to the way I learn	Females		Males		Total		Pearson Chi Square
	n	%	*n*	%	*n*	%	
Agree	210	79.80%	110	71.9%	320	76.9%	.19
Neutral	38	14.4%	29	19%	67	16.1%	
Disagree	14	5.3%	14	9.2%	28	6.7%	
No Answer	1	0.4%	0	0%	1	0.2%	
Total	263		153		416		

I feel this class format engages my interest	Females		Males		Total		Pearson Chi Square
	n	%	*n*	%	*n*	%	
Agree	195	74.1%	107	69.9%	302	72.6%	.69
Neutral	44	16.7%	27	18%	71	17.1%	
Disagree	2	8.4%	18	11.8%	40	9.6%	
No Answer	2	0.8%	1	0.7%	3	0.7%	
Total	263		153		416		

I think that I would learn better if a different format was used for the class	Females		Males		Total		Pearson Chi Square
	n	%	*n*	%	*n*	%	
Agree	97	37.2%	42	69.9%	139	72.6%	.09
Neutral	80	30.7%	58	18%	138	17.1%	
Disagree	81	31.0%	53	11.8%	134	9.6%	
No Answer	3	1.1%	0	0%	3	0.7%	
Total	261		153		414		

I find this class stimulates my interest in reading about this subject outside of class	Females		Males		Total		Pearson Chi Square
	n	%	*n*	%	*n*	%	
Agree	154	58.6%	485	55.9%	239	57.6%	.90
Neutral	75	28.5%	44	28.9%	119	28.7%	
Disagree	33	12.5%	2	14.5%	55	13.3%	
No Answer	1	0.4%	1	0.7%	2	0.5%	
Total	263		152		415		

I learn better when the instructor recaps key ideas from a class session	Females		Males		Total		Pearson Chi Square
	n	%	*n*	%	*n*	%	
Agree	204	77.6%	119	77.8%	323	77.6%	.24
Neutral	43	16.3%	30	19.6%	73	17.5%	
Disagree	11	4.2%	4	2.6%	15	3.6%	
No Answer	5	1.9%	0	0.7%	5	1.2%	
Total	263		153		416		

I am motivated to learn in this class	Females		Males		Total		Pearson Chi Square
	n	%	*n*	%	*n*	%	
Agree	205	77.9%	112	73.2%	317	76.2%	.27
Neutral	40	15.2%	32	20.9%	72	17.3%	
Disagree	15	5.7%	9	5.9%	24	5.8%	
No Answer	3	1.1%	0	0%	3	0.7%	
Total	263		153		416		

I use feedback from the instructor to improve my own work	Females		Males		Total		Pearson Chi Square
	n	%	*n*	%	*n*	%	
Agree	196	74.8%	103	67.3%	299	72.0%	.26
Neutral	50	19.1%	42	27.5%	92	22.2%	
Disagree	12	4.6%	6	3.9%	18	4.3%	
No Answer	4	1.5%	2	1.3%	6	1.4%	
Total	262		153		415		

Group work activities have helped my learning	Females		Males		Total		Pearson Chi Square
	n	%	*n*	%	*n*	%	
Agree	173	65.8%	99	64.7%	272	65.4%	.12
Neutral	47	17.9%	39	25.5%	86	20.7%	
Disagree	33	12.5%	11	7.2%	44	10.6%	
No Answer	10	3.8%	4	2.6%	14	4.3%	
Total	263		153		416		

This course is more engaging compared to other courses	Females		Males		Total		Pearson Chi Square
	n	%	*n*	%	*n*	%	
Agree	199	75.7%	113	73.9%	312	75%	.74
Neutral	41	15.6%	25	16.3%	6	15.9%	
Disagree	22	8.4%	13	8.5%	35	8.4%	
No Answer	1	0.4%	2	1.3%	3	0.7%	
Total	263		153		416		

This course has more engaging activities compared to other courses							Pearson Chi Square
	Females		Males		Total		
	n	%	*n*	%	*n*	%	
Agree	194	73.8%	104	68.0%	298	71.6%	.26
Neutral	42	16.0%	34	22.2%	76	18.3%	
Disagree	25	9.5%	12	7.8%	37	8.9%	
No Answer	2	0.8%	3	2.0%	5	1.2%	
Total	263		153		416		

I am more motivated to learn in this class than in my other classes							Pearson Chi Square
	Females		Males		Total		
	n	%	*n*	%	*n*	%	
Agree	175	66.5%	108	70.6%	283	68.0%	.74
Neutral	54	20.5%	28	18.3%	82	19.7%	
Disagree	32	12.2%	15	9.8%	47	11.3%	
No Answer	2	0.8%	2	1.3%	4	1.0%	
Total	263		153		416		

VITA

Name: Cihtlalli Guadalupe Perez

Address: 2701 Mier, Laredo, Texas 78043

Email Address: cihtlalliperez@gmail.com

Education: B.S. Psychology, The University of Texas at Austin, 2012