

Hispanic Serving Institution: Gender, Major, and Technology Influences on Academic Success during a Pandemic

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Abstract: This paper focuses on the impact COVID-19 has on students attending a Hispanic Serving Institution. Data retrieved from the Latinx student population was limited, which initiated this study. The research study includes a survey that was previously used, prior to the pandemic. Variables focused on are success rates of students attending a Hispanic Serving Institution, gender, major, technology, and attending a higher education institution during a pandemic. Conflict theory was used to understand how upper-class students would have more resources needed to successfully complete courses in a Hispanic Serving Institution during a pandemic. The impact the pandemic had in the response rate was drastically seen. Due to the limited response rate, nonparametric tests were used. However, insignificant results were seen. This study shows how the researcher needs to become more resourceful in collected data using an instrument or resort to qualitative methods. The limitations were seen in the limited responses attained.

Keywords: Hispanic serving institution, Gender, Major, Technology, Pandemic

Introduction

Understanding how students in a Hispanic Serving Institution during a pandemic is very important (Marshall, Moody-Marshall, & Roache, 2020; Miller, 2020). Negative effects are seen among faculty (Boyer-Davis, 2020; Ghazi-Saidi, Criffield, Kracl, McKelvey, Obasi, & Vu, 2020) and students (Aristovnik et al., 2020; Gaeta & Rodriguez, 2021). Higher education administration must be more collaborative in such a time (Marshall et al., 2020; Miller, 2020). This study will specifically focus on gender, major, and technology use. Gender has been found to impact the success rates in students attending a higher education institution (Engstrom, 2018; Escaname et al., 2020; Piloti, 2021). Student majoring in a specific field also have shown advantages (Escaname et al., 2020). Lastly, technology use has been known to positively impact students in a higher education institution (Escaname et al., 2020; Flores & Flores, 2018). The purpose of this study is to better understand how the success rates of students attending a Hispanic Serving Institution are influenced by their gender, major,

technology, during a pandemic are influenced.

Literature Review

The purpose of this study is to better understand students in Hispanic Serving Institutions and gender, major, and technology effects on student success during a pandemic. First, it is important to understand the impact of the pandemic from the top to the bottom to better understand the importance of this study. For example, Marshall, Moody-Marshall, and Roache (2020) and Miller (2020) both found an importance in better understanding the leadership in higher education systems during a pandemic. It is important to point out, leadership was found to be lacking in collaboration during these critical times (Marshall et al., 2020; Miller, 2020). Marshall et al. (2020) specifically, pointed out the need for higher education leaders to provide clear direction, work collaboratively, communicate effectively, and be adaptive in approaches to address new issues as leaders prepare to manage the re-opening of schools. Miller (2020) adds, administration should also discuss the roles and missions, not demand student compliance, and efficiency and financial stability may be found in a system driven by a shared mission. Hughey and Kirk-Jenkins (2021) added, leaders who are more communicative, flexible, and who offer institutional support through the ever-changing needs during a pandemic would make faculty feel more supported.

Faculty specifically felt stress and anxiety in the midst of all the changes during the pandemic (Boyer-Davis, 2020; Ghazi-Saidi et al., 2020). Some faculty ran into issues when it came to technology (Kirk-Jenkins & Hughey, 2021; Makhasane & Sasere, 2020). Hughey and Kirk-Jenkins (2021) found faculty lacked trust in the institution for forcing the quick transition to virtual or hybrid learning. The lack of choice also created challenges for faculty who were trying to balance work life and personal life challenges. Makhasane and Sasere (2020) found lecturers in developing countries lacked the technical know-how and experience with virtual instruction and assessments. Other challenges that arose during the pandemic for faculty include gender differences with women and mothers having issues with time management with lack of childcare. Boyer-Davis (2020) and Ghazi-Saidi et al. (2020) suggested some interventions to minimize the negative effects on faculty. Ghazi-Saidi et al. (2020) found faculty and students navigated through their courses smoothly if they had prior experience with online and had online material ready before the pandemic. This complements Boyer-Davis (2020) recommendations to expand instructional designs, professional development, counseling services budgets, and staffing in order to support faculty coping with their health issues and technological stressors. Lastly, it is important to repeat, Hughey and Kirk-Jenkins' (2021) recommendation to increase communication, flexibility, and institutional support to help decrease the negative effects of the pandemic on faculty.

Students also experienced stress during the pandemic and the challenges that were imposed (Aristovnik, Kerzic, Ravselj, Tomazevic, & Umek, 2020; Gaeta & Rodriguez, 2021). Students reported being concerned about their future careers and study issues (Aristovnik et al., 2020). Students were mainly bored, anxious, and frustrated (Aristovnik et al., 2020; Gaeta & Rodriguez, 2021). Loneliness was also an effect seen among students in higher education (Bedenlier, Glaser-Zikuda, Handel, Kopp, Stephan, & Ziegler, 2020; Gaeta & Rodriguez, 2021).

Gaeta and Rodriguez (2021) found loneliness negatively impacted self-regulated learning. Additionally, some students were not equipped for online learning (Bedenlier et al., 2020; Aristovnik et al., 2020). Aristovnik et al. (2020) found, in a global study, the transition to online lectures impacted undergraduate male students, attending part-time, majoring in applied science, with lower living standards, and in less developed regions (Africa and Asia). While the pandemic had an impact on undergraduate female students, who attended higher education institutions full-time, had financial issues, emotional issues, and personal issues. Assistance with coping was seen as a need during the pandemic while being a student in higher education (Bedenlier et al., 2020; Gaeta & Rodriguez, 2021). Coping strategies were found to mediate emotions and self-regulated learning (Gaeta & Rodriguez, 2021). Bedenlier et al. (2020) suggested Lecturers should also provide students opportunities to interact and communicate with other students in order to increase group cohesion and possibly discuss stressors.

Gender, Major, and Technology

Gender differences in success rates have been found among students in higher education institutions (Engstrom, 2018; Escaname et al., 2020; Piloti, 2021). In general women were more successful than men academically (Flores et al., 2020; Piloti, 2021). Female students were found to have well-educated parents, had positive attitudes about their profession, enjoyed typical traditions at the college, and socially integrated which were deemed important for academic success (Engstrom, 2018). The major a student decides to complete also seems to influence success rates in higher education institutions (Coltharp, 2020; Escaname et al., 2020). Specifically, the criminal justice majors seemed to be successful in a Southern region of Texas (Escaname et al., 2020). While STEM majors were more successful in a public, four-year, rural, university located in the Midwest (Coltharp, 2020). Lastly, technology is also a major component that assists students in successfully completing their academic goals (Escaname et al., 2020; Flores & Flores, 2018). Some researchers found the hours student sought information from their instructors and the number of videos they watched increased academic success rates (Duart, Hinojosa-Becerra, & Torres-Diaz, 2018). Other researchers found student's academic success rates increased through web technologies and applications offering liberties, allowing one to choose their own learning space and time spent online with other students (Brink & Ohei, 2019). Lastly, it is important to point out researchers have recommended future studies focus on the online delivery of an education during a pandemic (Cheong, Ho, & Weldon, 2021; Johnson, Seaman, & Veletsianos, 2020). Additionally, higher education institutions must also come to understand successful strategies, views, and experiences between males and females to better assist them in higher technical education (Engstrom, 2018). Escaname (2020) recommended using a random sample to further understand how gender, major, and technology contribute to the success of Latinx students. Alternatively, Brink and Ohei (2019) warns future researchers to focus on how technology supports the learning process as a supplemental option rather than replacing traditional methods.

Conflict Theory

Henslin (2017) refers to conflict theory as a theory that focuses on the upper and lower class members always fighting for the scarce resources that keep one in a position in power. So, in this research project we focus on the

upper class students compared to the lower class students competing for a higher education to attain or maintain one's position of power. During a pandemic, the class differences increase impacting the lower class students more than other socio economic class (Aristovnik et al., 2020). Conflict theory addresses the focus of this study, to better understand students in Hispanic Serving Institutions and gender, major, and technology effects on student success during a pandemic. Being that only one peer-reviewed article was found focused on Mexican students in higher education during the pandemic (Gaeta et al., 2021), the need to further assist the Latinx students in higher education in order to increase the success rates is evident (Escaname, 2020).

Method

Design

The purpose of this study is to better understand how students in Hispanic Serving Institutes are successful, while monitoring gender, major, and technological use during a pandemic. This research study took place in a Hispanic Serving Institute located in South Texas during a pandemic (see Appendix B). The Internal Review Board (IRB) approval was sought out first before collecting any data (see Appendix C). Additionally, the proper paperwork was completed to retrieve a random sample. According to a power analysis, the goal was to attain 80 responses in order to run a chi-square test with a large effect size and an alpha level of .05. The survey was administered via online, using randomly selected student emails, over the spread of three consecutive weeks. An initial invitation was sent with two follow-up reminders (see Appendix A). The randomly selected student emails and emails sent out were deleted after the data collection process in order to maintain anonymity. Only nine responses were retrieved.

Population and Sample

The research study focused on students who attend a Hispanic Serving Institution. The sample was set at 80 randomly selected students recommended by Escaname et al. (2020). A total of three-hundred students were randomly selected and received an online invitation with two reminders to complete the online survey. The majority of the respondents were of Mexican-ethnic descent. Students were attending a Hispanic Serving Institution during a pandemic. Students were assumed to have access to technology and their email accounts.

Results and Discussion

Descriptive data showed all variables, gender, major, questions addressing technology use, gpa, being affected by COVID, having a relative being affected by COVID, being negatively impacted emotionally by COVID, being negatively impacted psychologically by COVID, being negatively impacted financially by COVID provided skewed data. This was a given being that the response sample was a total of nine students out of three-hundred. The descriptive data showed the respondents were primarily from Mexican-ethnic Female students in higher education, who had a Grade Point Average (GPA) of 2.0-2.9, majored in Business, Health, and Social Sciences, had an overall positive outlook about technology use in the classroom but also believed technology

slows down the learning process and takes time away from class, had a family member with COVID, were negatively impacted by the pandemic emotionally and financially at a point in their academic year. Instead of a chi-square test, due to the small sample size, a nonparametric test called the Kolmogorov-Smirnov test was applied using Partner Support Program Plus (PSPP). The data did not yield any significant results.

Table 1. Are you of Latinx Origin?

Responses	Frequency	Percentage	Cumulative Percentage
No	2	22.2%	22.2%
Mexican	5	55.6%	77.8%
Chicano/a	2	22.2%	100.0%
Total	9	100.0%	

This table discusses the Latinx Origin of students attending a Hispanic Serving Institute during a pandemic.

Limitations

This research study was limited to using PSPP. The research was limited to accessing students who were living through a pandemic in some form, preventing them from dedicating time to this study.

Conclusion

Again, this research study was focused on better understanding how gender, major, technology, and attending a Hispanic Serving Institution during a pandemic influenced success rates. The goal was to attain a large random sample. The random sample would have been limited to an online survey. However, the response rate was so low one can only presume students are impacted the effects of the pandemic. The data yielded high response rates from Mexican-ethnic female students in higher education, who majored in Business, Health, and Social Sciences, who were in favor of technology use but believed it took time away from learning, who had a family member with COVID, and were negatively affected emotionally and financially by the pandemic. Lastly, based off of the descriptive data, the majority of students were passing with a Grade Point Average of 2.0-2.9.

Recommendations

Future researchers should resort to qualitative research during the pandemic in Hispanic Serving Institutions. This approach would better assist with retrieving a small number of participants while gathering important information needed to better understand the students in Hispanic Serving Institutions during a pandemic. The significant relationships found in quantitative research are important but being that the pandemic impacts these groups at higher rates (Aristovnik et al., 2020), the focus of research including the Latinx students in higher

education must focus on understanding the negative influences and effects brought on by the pandemic. This approach would better delve into influences that bring out success rate in Latinx students in higher education institutions during a pandemic.

Acknowledgements

I would like to thank South Texas College for their continued support.

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Appendix A. Survey Instrument

ICT Integration into Teaching Survey

This survey explores your perception and practice of ICT integration into teaching and your perception of ICT use to improve teaching. This survey will require 10 minutes or less of your time. Please note that this survey is completely anonymous and voluntary.

Section 1: Background Information

Are you 18 years old or older?

Yes

No

Please select an answer for each question.

1. Gender:

Male

Female

Other (please specify)

2. Major Discipline (check all that apply):

Arts

Business

Humanities

Health

Sociology

Technology

Criminal Justice

Social Sciences (Communications, Education, History,
Political Science, Anthropology, Psychology, Social Work)

Natural & Applied Sciences

Biology

Other, Please Specify: _____

3. Average number of courses enrolled per semester at all colleges where you've enrolled in over the past three years (select one)

1

2

3

4

5

6+

4. Years enrolled in college: (Please round to the nearest whole number)

5. Current Overall Grade Point Average (GPA):

—

6. Are you of Latinx origin?

No

Yes, Mexican, Mexican-American

Yes, Chicano/a

Yes, Puerto Rican

Yes, Cuban

Yes, Other (please specify)

7. Please indicate the race with which you identify.

African American or Black

American Indian or Alaska Native

Asian

Pacific Islander or Native Hawaiian

White

More than one of these

8. Have you been ill with the Coronavirus?

Yes

No

9. Has a family member been ill from the coronavirus?

Yes

No

10. Have you been negatively affected psychologically due to coronavirus events?

Yes

No

11. Have you been negatively affected psychologically due to coronavirus events?

Yes

No

12. Have you been negatively affected emotionally due to coronavirus events?

Yes

No

13. Have you been negatively affected Financially due to the coronavirus?

Yes

No

Section 2: Current Practice of ICT Use in Teaching

Please select the answer that best describes your current practice of technology use to support your teaching. (1) Never, (2) Sometimes (Few times per semester/quarter), (3) Often (1-3 times per Month), (4) Very Often (1-3 times per Week).

ICT Tools/Applications

a. Productivity tools (e.g., Word Processing, Spreadsheet, Database)

 (1) Never

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 (2) Sometimes (3) Often (4) Very Often

b. Multimedia presentation tools (e.g., PowerPoint, Flash, Video etc.)

 (1) Never (2) Sometimes (3) Often (4) Very Often

c. Internet, web applications

 (1) Never (2) Sometimes (3) Often (4) Very Often

d. Web Authoring Tools (e.g., Dreamweaver)

 (1) Never (2) Sometimes (3) Often (4) Very Often

e. Content specific software

 (1) Never (2) Sometimes (3) Often (4) Very Often

f. Podcasting/Vodcasting/Screencasting

 (1) Never (2) Sometimes (3) Often (4) Very Often

g. Reference software

 (1) Never (2) Sometimes (3) Often (4) Very Often

h. Drill and practice

 (1) Never

___ (2) Sometimes

___ (3) Often

___ (4) Very Often

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i. Games and simulations

___ (1) Never

___ (2) Sometimes

___ (3) Often

___ (4) Very Often

j. Desktop publishing

___ (1) Never

___ (2) Sometimes

___ (3) Often

___ (4) Very Often

k. Wireless handheld devices (e.g., PDA, iPhone, etc.)

___ (1) Never

___ (2) Sometimes

___ (3) Often

___ (4) Very Often

l. Course website

___ (1) Never

___ (2) Sometimes

___ (3) Often

___ (4) Very Often

m. Learning management system (e.g., Moodle, BlackBoard, WebCT)

___ (1) Never

___ (2) Sometimes

___ (3) Often

___ (4) Very Often

n. Imaging Devices (e.g., scanners, digital cameras, video cameras)

___ (1) Never

___ (2) Sometimes

___ (3) Often

___ (4) Very Often

o. Computer projection device

___ (1) Never

___ (2) Sometimes

___ (3) Often

___ (4) Very Often

p. Email or other Internet communication tool for assignment/project feedback.

___ (1) Never

___ (2) Sometimes

___ (3) Often

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___ (4) Very Often

q. Teach in computer classroom

___ (1) Never

___ (2) Sometimes

___ (3) Often

___ (4) Very Often

r. Ask students to use technology to demonstrate learning

___ (1) Never

___ (2) Sometimes

___ (3) Often

___ (4) Very Often

s. Ask students to use technology for communication

___ (1) Never

___ (2) Sometimes

___ (3) Often

___ (4) Very Often

t. Ask students to use technology for collaboration

___ (1) Never

___ (2) Sometimes

___ (3) Often

___ (4) Very Often

u. Ask student to use technology to create content

___ (1) Never

___ (2) Sometimes

___ (3) Often

___ (4) Very Often

Section 3: Perception of ICT Use in Teaching

Please select the answer that best describes your perception of technology use in teaching:

(1) Strongly Agree, (2) Agree, (3) Disagree, (4) Strongly Disagree.

a. Technology helps me to get more involved into teaching.

___ (1) Strongly Agree

___ (2) Agree

___ (3) Disagree

___ (4) Strongly Disagree

b. Technology integration is an important aspect of teaching career.

___ (1) Strongly Agree

___ (2) Agree

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___ (3) Disagree

___ (4) Strongly Disagree

c. Technology can be integrated to foster effective teaching and learning environment.

___ (1) Strongly Agree

___ (2) Agree

___ (3) Disagree

___ (4) Strongly Disagree

d. Technology integration can be a positive change agent in student learning.

___ (1) Strongly Agree

___ (2) Agree

___ (3) Disagree

___ (4) Strongly Disagree

e. Technology integration provides greater access to learning resources.

___ (1) Strongly Agree

___ (2) Agree

___ (3) Disagree

___ (4) Strongly Disagree

f. Technology integration makes teaching and learning more exciting.

___ (1) Strongly Agree

___ (2) Agree

___ (3) Disagree

___ (4) Strongly Disagree

g. Technology integration makes teaching and learning more interactive.

___ (1) Strongly Agree

___ (2) Agree

___ (3) Disagree

___ (4) Strongly Disagree

h. Technology integration improves communication between students and instructor.

___ (1) Strongly Agree

___ (2) Agree

___ (3) Disagree

____ (4) Strongly Disagree

i. Technology integration disrupts teaching especially if the computer system crashes or there is general computer network congestion.

____ (1) Strongly Agree

____ (2) Agree

____ (3) Disagree

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____ (4) Strongly Disagree

j. Technology integration creates learning problems, such as trying to find information from the World Wide Web (www).

____ (1) Strongly Agree

____ (2) Agree

____ (3) Disagree

____ (4) Strongly Disagree

k. Technology integration takes time away from actual classroom instruction.

____ (1) Strongly Agree

____ (2) Agree

____ (3) Disagree

____ (4) Strongly Disagree

l. Technology integration slows my teaching process for various reasons.

____ (1) Strongly Agree

____ (2) Agree

____ (3) Disagree

____ (4) Strongly Disagree

Section 4: Perceived Major Barriers that Limit Faculty Use of Computer

Technologies: For each statement, please indicate the extent to which you agree or disagree with the statement.

____ (1) Strongly Disagree

____ (2) Disagree

____ (3) Neither agree nor disagree

____ (4) Agree

____ (5) Strongly Agree

Some of the barriers that limit faculty use of computer technologies include:

1. Increase workload for instructors.

____ (1) Strongly Disagree

____ (2) Disagree

____ (3) Neither agree nor disagree

___ (4) Agree

___ (5) Strongly Agree

2. Lack of equipment and infrastructure.

___ (1) Strongly Disagree

___ (2) Disagree

___ (3) Neither agree nor disagree

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___ (4) Agree

___ (5) Strongly Agree

3. Lack of software.

___ (1) Strongly Disagree

___ (2) Disagree

___ (3) Neither agree nor disagree

___ (4) Agree

___ (5) Strongly Agree

4. Lack of time of learning about computer technologies.

___ (1) Strongly Disagree

___ (2) Disagree

___ (3) Neither agree nor disagree

___ (4) Agree

___ (5) Strongly Agree

5. Lack of effective training.

___ (1) Strongly Disagree

___ (2) Disagree

___ (3) Neither agree nor disagree

___ (4) Agree

___ (5) Strongly Agree

6. Lack of technical support.

___ (1) Strongly Disagree

___ (2) Disagree

___ (3) Neither agree nor disagree

___ (4) Agree

___ (5) Strongly Agree

7. Lack of administrative support.

___ (1) Strongly Disagree

___ (2) Disagree

___ (3) Neither agree nor disagree

___ (4) Agree

___ (5) Strongly Agree

8. Lack of collegial support and interaction.

- (1) Strongly Disagree
- (2) Disagree
- (3) Neither agree nor disagree
- (4) Agree
- (5) Strongly Agree

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9. Lack of designing interaction activities between instructors and students in my course.

- (1) Strongly Disagree
- (2) Disagree
- (3) Neither agree nor disagree
- (4) Agree
- (5) Strongly Agree

10. Lack of self-confidence.

- (1) Strongly Disagree
- (2) Disagree
- (3) Neither agree nor disagree
- (4) Agree
- (5) Strongly Agree

11. Lack of personal interest.

- (1) Strongly Disagree
- (2) Disagree
- (3) Neither agree nor disagree
- (4) Agree
- (5) Strongly Agree

12. Reduced course quality.

- (1) Strongly Disagree
- (2) Disagree
- (3) Neither agree nor disagree
- (4) Agree
- (5) Strongly Agree

Appendix B. Permission to Use Survey

Re: Permission Request to use 'ICT Integration Into Teaching Survey'

Musabbir Chowdhury <musabbir@axiomadvice.com>
Mon 12/7/2020 6:21 PM
To: Sylvia L. Flores <slflores@southtexascollege.edu>

CAUTION: This email originated from outside South Texas College. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Dear Dr. Flores,

I hope this email finds you well and thanks for your email. Please feel free to use the instrument for your future study.

Best regards,

Musabbir
--
Dr. Musabbir Chowdhury
Dean, School of Business and Information Technology
Fleming College


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W. www.axiomadvice.com

On Fri, Dec 4, 2020 at 2:49 PM Sylvia L. Flores <slflores@southtexascollege.edu> wrote:
Hello Dr. Chowdhury,

I hope all is well with you and your family and you are found in good health. I am contacting you again, because you granted me permission to use your survey titled 'ICT Integration Into Teaching Survey' two years ago and I am hoping you would grant me permission again.

Attached you will find a paper my colleagues and I put together with your survey. We are hoping to do more with it this year. Please let me know if I may proceed.

Best...

	Sylvia L. Flores, PhD Assistant Professor Building T 1.342 (956) 872-5615
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Appendix C. IRB Approval

[Redacted]
[Redacted]
[Redacted]
[Redacted] *Research & Analytical Services*
[Redacted] [Redacted]

Memo

To: Sylvia Flores
From: [Redacted]
Dean of Institutional Research, Effectiveness & Strategic Planning
Institutional Review Board (IRB) Liaison
RE: *Latinos: Gender, Major, & Technology Use Influences on Academic
Success in a Pandemic*
Date: February 2, 2021

After reviewing all pertinent information regarding your research proposal, [Redacted] Institutional Review Board has determined that this project is Exempt from review as per stipulations set forth under federal regulation 45 CFR 46.101(b)(2) (the 'survey' exemption).

Site approval is granted for a one-year timeframe.

Should your project need to be extended or changes are found to be necessary, an IRB Continuation/Change Form must be filled out, filed, and approved before you may continue. This document is available online at the Research & Analytical Services (RAS) website [Redacted]

At the completion of your study, please submit a copy of your final report to our office. Also, please keep us posted on any developments and let us know how we can be of help to you.

If you should have any questions, comments or concerns regarding this letter or your proposal please feel free to contact me. [Redacted] You can also contact [Redacted]

Best of luck in your current endeavors, and we look forward to hearing from you in the future.