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EDUCATION PRACTICE AND INNOVATION

Do Degree Maps Facilitate Student Success?

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Abstract:

The purpose of this mixed method study was to explore the potential impact of degree maps on facilitating student success. The concept grew out of quantitative evidence suggesting students using degree maps are more likely to enroll in our programs, continue in our programs, register for more classes per term, and have better graduation rates than those students who do not use a degree map. Our methodology included qualitative coding of focus group responses (n = 28) then using those emerging themes to inform a survey instrument to collect student perceptions about the degree map's impact (n = 211). This study's findings suggest the degree map is a powerful communication tool for advisors to help students through class selection and sequencing. The results provide insight into the differences between undergraduate and graduate student's needs.

Keywords:

1. INTRODUCTION

The Degree Map is a document that outlines course sequencing, along with the corresponding academic term, providing students a 'map to follow' to complete his/her degree. Example degree maps can be found in the appendices. There you'll find a '1st Year Degree Map' which focuses in on general education requirement,Bachelor of Science in Aeronautics Degree Map, an MS is Project Management Degree Map (one class per term), and a 'Fast Track' Master in Aeronautics Degree Map (two classes per term). This tool was created to simplify the official credit evaluation and to personalize degree program requirements for each individual student. Additionally, it provides clarity in the course selection process while encouraging the students to think long term. The personalized degree map becomes a communication tool between the student and remote academic adviser, bridging an often criticized gap of isolation between online students and academic advisement. Bridging this gap is growing increasingly more important as the student course registration process becomes completely self-serve. Degree mapping appears to have benefits to the academic advising department. This study seeks to answer the question: Do degree maps have a positive influence on student success?

2. LITERATURE REVIEW

In today's knowledge-driven economy, it is essential that individuals continually refresh knowledge and skills throughout a career lifetime. This artifact of the information age leads to adults returning to school—perhaps more than once—as jobs and even careers change. Educational institutions now realize that the adult learner has special needs beyond that of a traditional student attending college just after high school. That awareness has resulted in a new outreach to adult learners involving new support systems [1]. The outreach to adult learners is an attempt to break down the barriers that adult learners often face in the context of traditional education. Such efforts include making institutional information resources more accessible and providing mentors to guide students through the educational process. Orientations are a means to introduce students to such support systems and staff – including the introduction of academic advisors. Given that adult learners bring a wealth of experience to their learning, an increased focus on new learning methods and tools along with enhancements to outcomes assessment is noted among schools offering programs to adult learners [2].

Technology is said to play an important role in the outreach to adult learners. Efforts are made to personalize the student experience from the course management system to the access to library assets [3]. On the other hand, older adult learners are said to be less comfortable with technology, and therefore schools serving adult learners are expected to provide technological training and support on the school's educational platforms [4]. One approach to improving the accessibility of older adult learners returning to school is the provision of Web-based solutions to support student information needs. One example of such a system includes course planning materials, answers to general questions, and program requirements [5]. Other custom solutions have been developed such as a custom "e-advising" tool. Such a tool includes the means to create custom study plans as well as a schedule builder [6].

The APIL (Adult Persistence in Learning) model provides a theoretical basis for addressing the needs of adult learners. The APIL model consists of three constructs that are said to lead to the persistence of adult learners. The constructs include personal issues, environmental issues, and learning issues. The environmental issues construct includes information retrieval, awareness of opportunities and impediments, and finally, environmental compatibility. Student support systems such as Web pages or custom e-advising tools support the information retrieval and awareness of opportunities and impediments components of the APIL model and therefore have strong theoretical support [7].

Although it is understood that adult learners are in needs of the outreach and support of the educational institution, it is also recognized that adult learners are generally self-directed in their outlook. It is for this reason that the concept of "wayfinding" has emerged as a means for providing direction to the adult learner. Central to this idea is the understanding that it is essential for students to understand where they are currently in their respective programs (the "position") as well as where they need to go in order to meet their goals (the "target"). A self-directed wayfinding system is said to provide support students by providing information to help them understand their position and target, as well as to provide feedback along the way as they progress [8]. The degree map may be providing that solution for adult learners. Degree mapping appears to have benefits to the academic advising department wherequantitative evidence suggests students using degree maps are more likely to enroll in our programs, continue in our programs, register for more classes per term, and have better graduation rates than those students who do not use a degree map. This study seeks to answer the question: Do degree maps have a positive influence on student success?

3. RESEARCH METHODS: MIXED METHODS

3.1 Overview

This study uses a mixed method research design. "As a method, it focuses on collecting, analyzing, and mixing both quantitative and qualitative data in a single study or series of studies" ([9], p. 5). This research project was executed in two phases. In phase one, quantitative data mined out of a university's management information system, suggested that those students who had a degree map were being retained and graduated at a higher level than students who did not have a degree map. To better understand why, academic advisors emailed students four open ended questions to better understand the degree maps' influence. Those 28 student's qualitative responses were analyzed by coding them in qualitative software. Themes emerged. A framework created. Phase two of this research took the emergent themes from phase one and used them to inform an instrument. A 13-question survey was designed and administered via electric survey tool to 1,046 students. 211 students responded for a 20% response rate. Those results are reported here.

3.2 Phase One – Quantitative to Qualitative

The first phase was explanatorywhich "consists of first collecting quantitative data and then collecting qualitative data to help explain or elaborate on the quantitative results" ([10], p. 560). This research project began with quantitative evidence that presented itself when evaluating student service's quarterly indicators. Quantitative evidence suggested that students using degree maps are more likely to enroll in our programs, continue in our programs, register for more classes per term, and have better graduation rates than those students who do not use a degree map. In academic year 2012-2013, the year after instituting degree maps, there was 32% increase in student matriculations; continuing students (retained year to year) increased by 7.9%; and a 5.02% increase in graduations. Both continuing student populations and graduation rates continued to grow academic year 2013-2014.

This study used a small, purposeful sample to collect student opinions about the degree map. Students who were using the degree maps (260 undergraduate and 440 graduate students) were sent four open ended questions about degree maps. Since our students are geographically separated, the questions were sent via email from the student's academic advisor. To better understand how the degree maps are influencing students, an academic advisor, who already has a professional relationship with the students, send an email with four open ended questions:

Did the degree map help you get started with your first term?

How has the degree map helped you with course and term selections?

How will you utilize the degree map in the future?

Do you have any additional comments or suggestions?

A total of 63 responses were received (30 {11.5%} of the undergraduates and 33 {7.5%} of the graduate students). Of the 63 response, 28 students responded with enough verbalized option to be qualitatively coded. Those 28 student's qualitative responses were coded using nVivo qualitative coding software. An iterative approach to coding resulting inemerging themes and subthemes describing the impact of the degree maps.

3.3 Themes

"The object of the coding process is to make sense out of the text data, divide it into text or image segments, label the segments with codes, examine the codes for overlap and redundancy, and collapse the codes into broad themes" ([10], p. 251). **Table 1** represents the 13 themes that emerged from the 28 interviews. The authors recognize the concept as a theme if the concept presented itself by two or more of the participants. The table illustrates the themes to include the number of sources (an individual participant) and the references (how many times that concept was coded in the 28 participants' interviews).

Table 1. Emergent Themes

Name	Sources	References
Organize - helpful - easy	20	24
Personal experience	7	8
Tuition or Fin aid or reimburse	5	5
Comfortable	5	5
Stay on track	5	5
Busy Lives	4	4
Excited	4	4
Great starting point	3	3
Required courses	3	3
Excellent advisor	3	3
Adult learner getting 'back to school'	2	2
Want more than 1 year out	2	2
Unsure where to start	2	2

Figure 1, Degree Map Conceptual Framework, represents the conceptual framework inferred up from the themes found in the interview summaries and suggests that the adult learner goes through a series of emotions and challenges when going back to college. Through analyzing this study's interview summaries, the adult learner is '*unsure where to start*' when registering for classes. Adult learners' '*busy lives*' make it difficult to learn the intricacies of higher education. The degree map, provided by the academic adviser, as a tool to evaluate the individual's circumstance is a '*great place to start*'. The participants in this study said that the degree maps were '*easy*' to use, '*helpful*', and kept them '*organized*'. The '*excellent advisors*' guided the students through selecting the '*required courses*' (and applicable pre-requisites). This level of interaction proved to become a '*personal experience*' for the online student. The degree maps helped some participants with '*tuition reimbursement*'. These activities resulted in participates feeling '*exciting*' about school and '*comfortable*' with the process. Lastly, the degree map was stated to help '*students stay on track*' and a few participants requested a degree map with '*more than one year of courses mapped out*'.

3.4 Phase Two – Qualitative to Quantitative

The second phase of this research is exploratory. "The purpose of an exploratory mixed methods design is the procedure of first gathering qualitative data to explore a phenomenon, and then collecting quantitative data to explain relationships found in the qualitative data" ([10], p. 561). Phase two of this study started with the themes of from phase one. Those themes and subthemes were analyzed to inform a survey instrument to collect student opinions about academic advising needs and perceptions about degree maps. A 17 question survey instrument was designed. The survey questions were validated by three

Figure 1. Degree map conceptual framework.

academic advisors for accuracy and verbiage. Additionally, the instrument was validated by 15 students to ensure the questions solicited the responses the study indented. That process resulted in an instrument rewrite and an improved 13-question instrument. Of the 13 questions, three questions were demographic in nature, four questions established advising requirements, and six questions asked about degree maps.

Demographic questions:

Please identify your degree level.

Undergraduate Graduate

Please identify your status:

Civilian, Military (currently serving), and veteran students

Prior to enrolling in ERAU, how long has it been since your last enrollment in a civilian

formal education program (high school or college/university)?

Less than 1 year   1-3 years   3-5 years   5-10 years   More than 10 years

Personal advising requirements questions (5 point Likert scale accompanied these):

I needed assistance in order to determine which course I should take first in my program.

After I complete a course in my program, I need assistance in order to determine which

course I should take next.

Having a clear course sequence in a degree program makes returning to school easier.

My busy life makes it difficult for me to think about the sequence of courses in my degree.

Degree map questions (5 point Likert scale accompanied these):

A degree map removes some of the stress involved with going back to school.

My degree map helps me to stay on track in my program.

My degree map helps keep me organized.

My degree map reinforces my commitment to complete my degree.

Having a degree map helps me to feel more connected to my university.

A degree map simplifies my tuition reimbursement program.

The electronic surveys (surveymonkey.com) were distributed via email from the academic advising team with a note asking for participation and letting the students know the survey would be open for one week. A reminder email was sent out mid-week.

4. RESULTS

The 13-question degree map survey was sent to 1,046 students (804 undergraduate and 242 graduate students). 211 students replied for an overall response rate of 20% response rate (undergraduate response rate of 18% and a graduate response rate of 27%). A response rate of 20% exceeds the 5 to 10% response rate typically encountered in mail surveys [11]. Also, a 20% response rate is considered a healthy response for email delivered electronic survey instruments [12]. The following descriptive statistics is represented first by the total participants and then examined by comparing the undergraduate and graduate students' responses. To evaluate the differences between the two populations, undergraduate and graduate students, this paper uses the null hypothesis and tests it with a chi squared inferential statistic.

The demographic breakdown of the participants are as follows:

Table 2.   Response breakdown by degree level.

Please identify your degree level:		
Answer Options	**Response Percent**	**Response Count**
Undergraduate	68.7%	145
Graduate	31.3%	66

Table 3.   Response breakdown by status.

Please identify your status:		
Answer Options	**Response Percent**	**Response Count**
Civilian	42.2%	89
Military (currently serving)	25.1%	53
Veteran	32.7%	69

Table 3a.   Response breakdown by status and degree level.

Please identify your status:				
	Please identify your degree level:			
Answer Options	**Undergraduate**	**Graduate**	**Response Percent**	**Response Count**
Civilian	58	31	42.2%	89
Military (currently serving)	37	16	25.1%	53
Veteran	50	19	32.7%	69

NOTE: for analysis purposes, below questions will be numbered Q1 – Q10:

Q1: I needed assistance in order to determine which course I should take first in my program.

H0: There is no association between degree level and responses to the degree map survey instrument

Table 4.   Response breakdown by time since last formal education program.

Prior to enrolling in ERAU, how long has it been since your last enrollment in a civilian formal education program (high school or college/university)?		
Answer Options	Response Percent	Response Count
Less than 1 year	18.0%	38
1-3 years	16.1%	34
3-5 years	18.5%	39
5-10 years	19.0%	40
More than 10 years	28.4%	60

Table 4a.   Response breakdown by time since last formal education program and degree level.

Prior to enrolling in ERAU, how long has it been since your last enrollment in a civilian formal education program (high school or college/university)?				
	Please identify your degree level:			
Answer Options	Undergraduate	Graduate	Response Percent	Response Count
Less than 1 year	26	12	18.0%	38
1-3 years	24	10	16.1%	34
3-5 years	23	16	18.5%	39
5-10 years	32	8	19.0%	40
More than 10 years	40	20	28.4%	60

Table 5.   Response breakdown about selecting a first course.

I needed assistance in order to determine which course I should take first in my program.		
Answer Options	Response Percent	Response Count
Strongly Agree	49.5%	104
Agree	30.5%	64
Neither Agree or Disagree	10.5%	22
Disagree	2.9%	6
Strongly Disagree	6.7%	14

Table 5a.   Response breakdown about selecting a first course and degree level.

I needed assistance in order to determine which course I should take first in my program.				
	Please identify your degree level:			
Answer Options	Undergraduate	Graduate	Response Percent	Response Count
Strongly Agree	85	19	49.5%	104
Agree	40	24	30.5%	64
Neither Agree or Disagree	12	10	10.5%	22
Disagree	1	5	2.9%	6
Strongly Disagree	6	8	6.7%	14

Question 1.

Ha: There is an association between degree level and responses to the degree map survey instrument Question 1.

(χ^2 23.04, 4 df, p=0) The null hypothesis is **rejected**.

The chi square result indicates that survey responses to this question varied based upon degree level. Undergraduate students responded to this question more positively than undergraduate students.

Q2: After I complete a course in my program, I need assistance in order to determine which course I should take next.

Table 6.   Response breakdown for which course next.

After I complete a course in my program, I need assistance in order to determine which course I should take next.		
Answer Options	Response Percent	Response Count
Strongly Agree	27.5%	58
Agree	38.4%	81
Neither Agree or Disagree	15.2%	32
Disagree	10.4%	22
Strongly Disagree	8.5%	18

Table 6a.   Response breakdown for which course next and degree level.

After I complete a course in my program, I need assistance in order to determine which course I should take next.				
	Please identify your degree level:			
Answer Options	Undergraduate	Graduate	Response Percent	Response Count
Strongly Agree	46	12	27.5%	58
Agree	54	27	38.4%	81
Neither Agree or Disagree	24	8	15.2%	32
Disagree	13	9	10.4%	22
Strongly Disagree	8	10	8.5%	18

H0: There is no association between degree level and responses to the degree map survey instrument Question 2.

Ha: There is an association between degree level and responses to the degree map survey instrument Question 2.

(χ^2 9.6, 4 df , p=.048) The null hypothesis is **rejected.**

The chi square result indicates that survey responses to this question varied based upon degree level. Undergraduate students responded to this question more positively than undergraduate students.

Q3: Having a clear course sequence in a degree program makes returning to school easier.

Table 7.   Response breakdown clear course sequence.

Having a clear course sequence in a degree program makes returning to school easier.		
Answer Options	Response Percent	Response Count
Strongly Agree	60.3%	126
Agree	27.8%	58
Neither Agree or Disagree	9.1%	19
Disagree	1.9%	4
Strongly Disagree	1.0%	2

Table 7a.   Response breakdown clear course sequence and degree level.

Having a clear course sequence in a degree program makes returning to school easier.				
	Please identify your degree level:			
Answer Options	Undergraduate	Graduate	Response Percent	Response Count
Strongly Agree	94	32	60.3%	126
Agree	34	24	27.8%	58
Neither Agree or Disagree	10	9	9.1%	19
Disagree	3	1	1.9%	4
Strongly Disagree	2	0	1.0%	2

H0: There is no association between degree level and responses to the degree map survey instrument Question 3.

Ha: There is an association between degree level and responses to the degree map survey instrument Question 3.

(χ^2 8.47, 4 df, p=.076) The null hypothesis is **accepted.**

The chi square results indicate that survey responses to this question did not vary according to degree level.

Q4: A degree map removes some of the stress involved with going back to school.

Table 8.   Response breakdown about the stress involved with going back to school.

A degree map removes some of the stress involved with going back to school.		
Answer Options	Response Percent	Response Count
Strongly Agree	51.2%	108
Agree	33.2%	70
Neither Agree or Disagree	10.0%	21
Disagree	2.8%	6
Strongly Disagree	2.8%	6

Table 8a.   Response breakdown about the stress involved with going back to school and degree level.

A degree map removes some of the stress involved with going back to school.				
	Please identify your degree level:			
Answer Options	Undergraduate	Graduate	Response Percent	Response Count
Strongly Agree	81	27	51.2%	108
Agree	43	27	33.2%	70
Neither Agree or Disagree	14	7	10.0%	21
Disagree	4	2	2.8%	6
Strongly Disagree	3	3	2.8%	6

H0: There is no association between degree level and responses to the degree map survey instrument Question 4.

Ha: There is an association between degree level and responses to the degree map survey instrument Question 4.

(χ^2 5.21, 4 df , p=.267) The null hypothesis is **accepted.**

The chi square results indicate that survey responses to this question did not vary according to degree level.

Q5: My degree map helps me to stay on track in my program.

Table 9.   Response breakdown about staying on track.

My degree map helps me to stay on track in my program.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	55.7%	117
Agree	31.4%	66
Neither Agree or Disagree	6.2%	13
Disagree	3.8%	8
Strongly Disagree	2.9%	6

Table 9a.   Response breakdown about staying on track and degree level.

My degree map helps me to stay on track in my program.				
	Please identify your degree level:			
Answer Options	**Undergraduate**	**Graduate**	**Response Percent**	**Response Count**
Strongly Agree	86	31	55.7%	117
Agree	40	26	31.4%	66
Neither Agree or Disagree	11	2	6.2%	13
Disagree	4	4	3.8%	8
Strongly Disagree	3	3	2.9%	6

H0: There is no association between degree level and responses to the degree map survey instrument Question 5.

Ha: There is an association between degree level and responses to the degree map survey instrument Question 5.

(χ^2 6.63, 4 df , p=.157) The null hypothesis is **accepted.**

The chi square results indicate that survey responses to this question did not vary according to degree level.

Q6: My degree map helps keep me organized.

Table 10.   Response breakdown about keeping organized.

My degree map helps keep me organized.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	51.2%	108
Agree	35.1%	74
Neither Agree or Disagree	8.1%	17
Disagree	2.8%	6
Strongly Disagree	2.8%	6

H0: There is no association between degree level and responses to the degree map survey instrument Question 6.

Table 10a.   Response breakdown about keeping organized and degree level.

My degree map helps keep me organized.				
	Please identify your degree level:			
Answer Options	Undergraduate	Graduate	Response Percent	Response Count
Strongly Agree	78	30	51.2%	108
Agree	49	25	35.1%	74
Neither Agree or Disagree	13	4	8.1%	17
Disagree	2	4	2.8%	6
Strongly Disagree	3	3	2.8%	6

Ha: There is an association between degree level and responses to the degree map survey instrument Question 6.

(χ^2 5.67, 4 df , p=.225) The null hypothesis is **accepted.**

The chi square results indicate that survey responses to this question did not vary according to degree level.

Q7: My busy life makes it difficult for me to think about the sequence of courses in my degree.

Table 11.   Response breakdown about a busy life.

My busy life makes it difficult for me to think about the sequence of courses in my degree.		
Answer Options	Response Percent	Response Count
Strongly Agree	27.0%	57
Agree	36.0%	76
Neither Agree or Disagree	16.6%	35
Disagree	15.2%	32
Strongly Disagree	5.2%	11

Table 11a.   Response breakdown about a busy life and degree level.

My busy life makes it difficult for me to think about the sequence of courses in my degree.				
	Please identify your degree level:			
Answer Options	Undergraduate	Graduate	Response Percent	Response Count
Strongly Agree	45	12	27.0%	57
Agree	53	23	36.0%	76
Neither Agree or Disagree	27	8	16.6%	35
Disagree	15	17	15.2%	32
Strongly Disagree	5	6	5.2%	11

H0: There is no association between degree level and responses to the degree map survey instrument Question 7.

Ha: There is an association between degree level and responses to the degree map survey instrument Question 7.

(χ^2 12.76, 4 df, p=.013) The null hypothesis is **rejected.**

The chi square result indicates that survey responses to this question varied based upon degree level. Undergraduate students responded to this question more positively than undergraduate students.

Q8: My degree map reinforces my commitment to complete my degree.

Table 12.   Response breakdown about commitment to degree completion.

My degree map reinforces my commitment to complete my degree.		
Answer Options	Response Percent	Response Count
Strongly Agree	41.2%	87
Agree	37.4%	79
Neither Agree or Disagree	13.7%	29
Disagree	3.8%	8
Strongly Disagree	3.8%	8

Table 12a.   Response breakdown about commitment to degree completion and degree level.

My degree map reinforces my commitment to complete my degree.				
	Please identify your degree level:			
Answer Options	Undergraduate	Graduate	Response Percent	Response Count
Strongly Agree	69	18	41.2%	87
Agree	49	30	37.4%	79
Neither Agree or Disagree	19	10	13.7%	29
Disagree	5	3	3.8%	8
Strongly Disagree	3	5	3.8%	8

H0: There is no association between degree level and responses to the degree map survey instrument Question 8.

Ha: There is an association between degree level and responses to the degree map survey instrument Question 8.

(χ^2 10.02, 4 df, p=.040) The null hypothesis is **rejected.**

The chi square result indicates that survey responses to this question varied based upon degree level. Undergraduate students responded to this question more positively than undergraduate students.

Q9: Having a degree map helps me to feel more connected to my university.

Table 13.   Response breakdown about connectedness to the university.

Having a degree map helps me to feel more connected to my university.		
Answer Options	Response Percent	Response Count
Strongly Agree	31.3%	65
Agree	30.8%	64
Neither Agree or Disagree	27.4%	57
Disagree	7.2%	15
Strongly Disagree	3.4%	7

H0: There is no association between degree level and responses to the degree map survey instrument Question 9.

Ha: There is an association between degree level and responses to the degree map survey instrument Question 9.

(χ^2 10.32, 4 df, p=.035) The null hypothesis is **rejected.**

Table 13a.   Response breakdown about commitment to degree completion and degree level.

Having a degree map helps me to feel more connected to my university.				
	Please identify your degree level:			
Answer Options	Undergraduate	Graduate	Response Percent	Response Count
Strongly Agree	50	15	31.3%	65
Agree	45	19	30.8%	64
Neither Agree or Disagree	40	17	27.4%	57
Disagree	6	9	7.2%	15
Strongly Disagree	3	4	3.4%	7

The chi square result indicates that survey responses to this question varied based upon degree level. Undergraduate students responded to this question more positively than undergraduate students.

Q10: A degree map simplifies my tuition reimbursement program.

Table 14.   Response breakdown about tuition reimbursement.

A degree map simplifies my tuition reimbursement program.		
Answer Options	Response Percent	Response Count
Strongly Agree	21.3%	45
Agree	17.1%	36
Neither Agree or Disagree	49.8%	105
Disagree	7.6%	16
Strongly Disagree	4.3%	9

Table 14a.   Response breakdown about tuition reimbursement and degree level.

A degree map simplifies my tuition reimbursement program.				
	Please identify your degree level:			
Answer Options	Undergraduate	Graduate	Response Percent	Response Count
Strongly Agree	33	12	21.3%	45
Agree	34	2	17.1%	36
Neither Agree or Disagree	68	37	49.8%	105
Disagree	6	10	7.6%	16
Strongly Disagree	4	5	4.3%	9

H0: There is no association between degree level and responses to the degree map survey instrument Question 10.

Ha: There is an association between degree level and responses to the degree map survey instrument Question 10.

(χ^2 21.9, 4 df , p=0) The null hypothesis is **rejected.**

The chi square result indicates that survey responses to this question varied based upon degree level. Undergraduate students responded to this question more positively than undergraduate students.

Q#	Survey Questions	G/UG	χ^2	Null
Q1	I needed assistance in order to determine which course I should take first in my program.	p=0	23.04, 4 df	*Reject*
Q2	After I complete a course in my program, I need assistance in order to determine which course I should take next.	p=.048	9.6, 4 df	*Reject*
Q3	Having a clear course sequence in a degree program makes returning to school easier.	p=.076	8.47, 4 df	Accept
Q4	A degree map removes some of the stress involved with going back to school.	p=.267	5.21, 4 df	Accept
Q5	My degree map helps me to stay on track in my program.	p=.157	6.63, 4 df	Accept
Q6	My degree map helps keep me organized.	p=.225	5.67, 4 df	Accept
Q7	My busy life makes it difficult for me to think about the sequence of courses in my degree.	p=.013	12.76, 4 df	*Reject*
Q8	My degree map reinforces my commitment to complete my degree.	p=.040	10.02, 4 df	*Reject*
Q9	Having a degree map helps me to feel more connected to my university.	p=.035	10.32, 4 df	*Reject*
Q10	A degree map simplifies my tuition reimbursement program.	p=0	21.9, 4 df	*Reject*

Figure 2. Summary of Findings.

5. DISCUSSION

The findings of the mixed method study suggest that overall students have positive perceptions of degree mapping support provided by the university advising staff. That being said, the positive responses are observed to vary by degree level, with undergraduate students generally responding more favorably than graduate students. It is presumed that the increased educational experience of graduate students would naturally lead to a greater sense of independence when pursuing their studies—thereby leading to responses less positive overall than undergraduate students. These findings, combined with initial increases in new student matriculations, student enrollments, retention rates, and graduations have created an auspicious view of degree maps by university administration, which has steered a global adoption at over 150 campus locations worldwide. As universities are being scrutinized for overall retention rates, it will be critical to research any tools such as degree maps which may positively impact retention.

6. Recommendations for further research

Although students are observed to respond positively to degree map and other advising support, further research is recommended in order to investigate the role of such support with student retention. In addition, it is of interest to determine if positive responses to degree map support actually increase overall student motivation. Furthermore, this study was conducted within an online university environment; therefore the role of degree map tools in a traditional learning environment is a recommended avenue for future research. The role that student degree maps play in support in both traditional and non-traditional university environments is likely to be useful to academic advisors and other student affairs professionals

in order to increase their awareness and understanding of student transition to college life.

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