

Degrees of Motivation: Understanding Direct Pathway and Returner Student Choices in Engineering Graduate Programs

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Abstract

Some students, called Direct Pathway students, spend less than five years outside of the classroom before going back to school for an advanced degree. Other students, called Returners, spend five years or more in industry before returning to school for an advanced degree. This study is part of a larger project investigating the similarities and differences between these two demographics in engineering education; these studies have been carried out through qualitative interview data analysis. The focus of this particular study is to determine what differences exist in the motivations these students have for pursuing a master's degree, as well as what factors they consider in choosing a certain degree program. Motivations for attending specific programs, primary factors in choice of college, and identification of unique needs could provide valuable insights on how to advise these students better and design programs that ensure they are receiving the most out of their education.

Introduction

Graduate engineering education has not studied as much as other levels of education [1]. This area of study is of interest because graduate students can have very different experiences before attending graduate school. While undergraduates exhibit more of the usual pathways to graduation, i.e., they attend college directly or soon after graduating from high school, and perhaps after a bit of observation they choose a discipline to study at that point and then complete their bachelor's degree. The experiences of students before attending higher education are generally similar. Graduate students, on the other hand, have more choices~ they may work in industry for several years, they may obtain ancillary degrees such as Master of Business Administration (MBA), or they may opt into other professions than engineering. They may also complete a combined bachelor/master degree or go to graduate school directly out of undergrad. For this study, *Returners* are those students who have spent five or more years out of the classroom before returning for a formal graduate degree in engineering. *Direct Pathway* students spend less than five years out of college before attending graduate school. These different experiences and demographics are not formally tracked, but performance in the classroom as well as implicit knowledge of the discipline have shown to be different for the two groups [2]. The decision to go to grad school and motivations for completion may be instructive to schools of engineering, because offerings tailored to specific needs and motivations might encourage potential students in their choice of engineering school. It is informative to understand the motivations and rationale for attending graduate school in light of these different demographics. This study explored two related topics when choosing a graduate program, and whether Returners and Direct Pathway have differing outlooks on these topics.

Research Question 1: What are the motivations for engineers to attend graduate school?

Research Question 2: What factors come into play when deciding which graduate program to attend?

Research Question 3: Are there differences in motivations and decision-making between Returner and Direct Pathway students?

This paper draws on research that has sought to investigate the experiences of Returners and Direct Pathway students in order to better understand these students and learn how to meet their unique needs. Due to their different life circumstances, it is reasonable to expect that Returners and Direct Pathway students would also differ in areas such as what reasons they have for seeking a degree, their approach to learning, what challenges they face, and more. Indeed, past research has supported this idea.

Literature Review

1. Comparison of Returners and Direct Pathway Students

Many of the differences between Returners and Direct Pathway students stem from different life circumstances. Direct Pathway students usually are young and have few obligations; therefore, they have more time and energy to focus on their degree, and can make drastic changes in their life, such as moving across the country, in order to pursue it [3]. They also tend to be more adjusted to an academic environment because they have spent little to no time away from such a setting [3]. In contrast, Returners frequently have put down roots, with homes, families, full-time jobs, and other obligations that restrict their time, energy, and freedom to make large, life-altering decisions in order to pursue an advanced degree [3]. These outside pressures can cause Returners to suffer from poor quality of life from trying to balance academia with the other demands of their day-to-day life [3].

That being said, Returners are not entirely disadvantaged, nor do Direct Pathway students have a monopoly on academic advantages. As a matter of fact, there are many benefits that Returners hold over their less-experienced peers. Notably, Returners tend to have more direction in their goals and studies than Direct Pathway students; they typically return in pursuit of a specific career goal—for instance, advancement or a change in career—and are better equipped to choose classes that will further those goals [3]. Their work experience also provides significant advantages: they can draw upon their personal experience to find applications for new information and furthermore are able to discern what information is most important to focus on due to their work experience [4]. Direct Pathway students, on the other hand, frequently do not have specific goals in mind for their degree, nor do they have the direction or experience to guide their academic choices. Therefore, they are more likely to pick generalized classes instead of being able to focus in on a particular path [2,3]. Additionally, inexperienced students are usually unable to think of applications for new information without external direction, and have a tendency to view all information as equally important; as a result, they may become frustrated from not knowing where it is most important to focus their time and effort [4].

There are also some assumptions one might make regarding what advantages and disadvantages one would expect to see of these demographics that have turned out not to be entirely true. First of all, although one might expect Returners to have forgotten significant amounts of information

in their time away from school, it has been found that this time spent away does not impact retention of fundamental concepts, and in fact allows Returners to develop expertise [2]. Furthermore, the information that students do not retain from their undergraduate education has been found to be universal among both Returners and Direct Pathway students regardless of time spent away from school; this information is usually specific, non-fundamental, or has not been useful in the time since having learned it [5]. Finally, one might expect Returners to have a higher confidence or self-efficacy than Direct Pathway students as a result of their experience; however, in most areas, no significant difference in confidence or self-efficacy between the two demographics could be found [6,7]. The only areas where Returners had higher self-efficacy than Direct Pathway students were working effectively on a team and making important safety decisions [6].

2. Motivation

In order to understand what motivates students to seek an advanced degree, it is important to understand motivation itself. Two important theories of motivation are discussed here: Self-Determination Theory (SDT) and Situated Expectancy-Value Theory (SEVT), the latter of which in particular has informed this study.

SDT establishes the existence of a spectrum across which are increasing degrees of motivation, ranging from amotivation (a lack of intention to act), through extrinsic motivation (motivation to act via external factors), and to intrinsic motivation (motivation which arises out of interest in or enjoyment of the activity) [8]. This spectrum coincides with varying levels of self-determination; low levels of self-determination are referred to as controlled motivation, whereas higher levels of self-determination are referred to as autonomous motivation. Autonomous forms of motivation, whether intrinsic or extrinsic, tend to lead to greater performance, satisfaction, and well-being [8]. However, an individual person may exhibit personal preferences towards controlled motivation or amotivation independently of the context of the task itself; in other words, motivation is a function of both personal inclinations and the social environment surrounding a task, either of which may be oriented in different directions regarding autonomy, control, or amotivation [8].

Meanwhile, SEVT states that motivation is dynamic, and is influenced not only by the immediate situation at hand, but also by cultural background. This approach attempts to explain why people choose certain paths in life over others, as well as what factors exist that discourage them from taking a certain path. These choices are not independent of outside influences; they are influenced by one's outlook on life, cultural experiences, family background and expectations, social influences, and other external factors [9]. These factors inform what is referred to as expectancy value, or what a given person expects to gain from a certain decision [9]; an otherwise identical set of choices presented to two different people with differing backgrounds would therefore yield different expectancy values based on their subjective view of the options and potential outcomes, even if the objective outcomes would be the same. Therefore, when people choose whether or not to attend graduate school, and subsequently decide what to study, their decision is dependent on expectancy value. As Returners and Direct Pathway students have been established to have significantly different backgrounds, we can also expect to see significant differences in the expectancy value between the two demographics, and therefore potentially different motivations to seek an advanced degree.

3. Graduate School Decisions

A significant amount of research has already been done to identify common considerations and perceived costs that influence students' decisions to attend and persist in graduate school. These factors include professional and career development [10, 11], cost of tuition and available financial support [12, 13], the quality of the program being considered [12], social pressure or support [13], the opportunity cost of obtaining the degree [14], life balance and personal well-being [10, 14], and sunk cost [14]. Although all of these influences are typically found in all graduate student populations, the importance of certain factors over others has also been found to vary somewhat according to certain demographics; furthermore, gaps in aspiration towards a graduate degree and actual attainment of the degree were also found to exist among certain populations.

Race and gender found some variance among what factors were considered in the decision to attend graduate school, as well as whether aspiration manifested in actual enrollment. Compared to men, women were found to be more strongly influenced by social factors such as significant others, family, and their peers [13]. Additionally, although there was no significant difference in enrollment between married and unmarried women with aspirations to attend graduate school, it has been found that married women do not tend to aspire to attend graduate school as much as unmarried women do [11, 13]. Regarding race, many underrepresented minority students who successfully complete a bachelor's degree aspire to attain a graduate education, but only a small number actually achieve enrollment compared to white students with similar aspirations, implying that structural disadvantages that would obstruct marginalized students from actually attending grad school still persist in education today.

Socio-economic standing was another factor that influenced aspirations and enrollment in graduate programs. Notably, first-generation college students are less likely to aspire to, apply for, and enroll in graduate school than students whose parents attended college [11, 13]. Additionally, it was found that middle class students were less likely to aspire to graduate school than both lower-income and higher-income students. This may be as a result of satisfaction with the middle-class lifestyle, and a lack of desire to improve socio-economic standing. In contrast, lower-income students have more incentive to improve their socio-economic standing, while higher-income students simply have greater access to resources and opportunities that would allow them to pursue a graduate education than middle- and lower-income students [13].

Finally, differences were also found in motivation for Masters and Doctoral students. Masters students were found to consider literal costs such as tuition, financial support from an employer, and debt prior to enrollment when considering a graduate education. In contrast, doctoral students were not as concerned with these factors; instead, they tended to look for a quality program that provided them with networking opportunities [12].

Some studies have been done in the past regarding Returners and the factors they consider when they decide to return to graduate school. One study, focused only on Returners, found that Returners are primarily motivated by utility value in the decision to attain a graduate degree, and have a high expectancy value regarding the decision [15]. Additionally, four costs to returning have been identified. First, intellectual costs, which are issues related to forgotten material, computer skills, study groups, and curriculum [15]. There were also balance costs; these involved balancing academics with other obligations, such as family, community, and personal

health [15]. Cultural and environmental costs were also identified, which involved negative feelings associated with the shift from a work environment to a university environment, adjusting to different expectations and norms, and a potential feeling of being demoted [15]. Finally, there were financial costs, such as tuition, loss of income, the need to maintain benefits such as medical insurance and securing adequate funding for the degree [15].

Specific differences between Returners and Direct Pathway students regarding their decision-making processes as regards obtaining a Master's degree have been studied. It has been found that while both demographics considered the same factors in their decision to be the most important, other differences exist in sources of information, preferences for the characteristics of a university, and the strategies students used for acceptance. Although both demographics used university websites to find information, Returners relied on the website to a far greater degree than Direct Pathway students, who were more likely to consult undergraduate staff and current Master's students, both resources being less available for Returners [16].

Regarding university characteristics, Direct Pathway students were far more concerned with location and culture than Returners [16]. Returners, on the other hand, were more likely to prefer an online education [17]. Although both groups valued academic programs and disciplines as the most important factor in their decision, Returners were significantly more concerned with these particular factors than Direct Pathway students, who also took other factors under consideration [16]. Furthermore, Returners were more likely to use unique strategies for acceptance than Direct Pathway students. Direct Pathway students utilized letters of recommendation from professors; Returners, on the other hand, relied on project portfolios or letters of recommendation from a colleague [16].

Other factors sometimes related to Returners are disciplinary migration, full- or part- time education, and military experience. Although disciplinary migration is not unique to Returners, it is common amongst them, and therefore relevant; common factors in the decision for students to migrate disciplines were career exposure, specialization, marketability, and availability of a certain program [18]. Additionally, there is significant overlap between Returners and part-time students; part-time students were found to consult fewer people than full-time students when considering graduate education; they preferred night classes or online education. They were also more likely to value the utility of the prospective degree than full-time students, who were more interested in passion for the field, research opportunities, and networking [20]. Finally, due to the nature of military college programs, students who attend college through the military spend at least 5 years working after attaining their bachelor's degree in order to fulfill the program's obligations; therefore, military professionals who attend graduate school tend to be Returners. For some of these students, their military experience pushed them to return to graduate school, often out of a desire to pursue a career outside of the military. For others, however, military experience was not a factor in the decision to return, or only reinforced existing aspirations towards graduate school [20].

Although some motivations for Returners to attain a graduate degree have been studied or identified in the past, there is a gap in this research. This has only been studied with survey data or very limited interview data and was not always the primary focus of past studies. Furthermore, very little research has been done to directly compare the motivations of Returners with the motivations of Direct Pathway students. This paper seeks to close the current gap in the research by approaching the investigation with substantial interview data and consideration for both demographics.

Methods

This was a mixed-methods research study that was conducted in two phases. After obtaining IRB approval, the first phase consisted of a survey sent to students in graduate schools across the United States. These surveys were sent electronically and only after receiving permission from participating graduate schools. The parameters for inviting respondents were US citizenship, US high school attendance, and undergraduate attendance/completion of a bachelor's degree at a US engineering school. The demographics can be found in Table 1.

Table 1. Demographics of respondents in Phase 1.

Ethnicity	R	DP
American Indian/White	4	1
Asian	5	38
Asian/White	0	6
Black or African American	4	6
Black or African American/Latino/a	0	1
Hispanic/Latino/a	4	7
Hispanic/Latino/a, White	1	5
Other	1	3
White	59	148
No Response	10	27
Totals	88	242

At the end of the survey, respondents were asked if they would be interested in and willing to do an interview with the researchers. From those interested people, we constructed a convenience sample of participants for the interviews. 20 Direct Pathway and 21 Returners were interviewed. This second interaction constituted phase 2, and included a Calculus Concept inventory as well as a concept map that compared and contrasted the understanding of engineering from the perspective of these participants. The time spent in industry is shown in Table 2.

Table 2. Age and time in industry before returning.

Metric	R	DP
Median age	36	24
Mean time in industry	9.5	1.3
Median time in industry	6.75	1.25

Results

The two groups, Returners and Direct Pathway, had some similar motivations for attending graduate school for a master's degree. Because of the many different ways adults can get professional development, the motivation to go to graduate school in particular was of interest. The responses of the participants in the two groups are presented separately, sifted into motivation to return and choice of program. These were not the primary focus of the research. Therefore, the authors recognize that there are gaps in the data for others to fill.

Returners' Motivation to Return

One of the basic themes that emerged was some sort of dissatisfaction with current situation. Boredom or a flat experience with the current job coupled with the thought that a master's degree would help them stand out and give them more options. Ralph said,

I was looking for a way to go, call it pad the resume to say, alright now, I got these years of experience, well prove it. Yes, it is more than just the time on the job and that's kind of what it is. I'm using it more just to pad the resume, so that if anything happens, that I will be better able to go to the next position because I have a step above the normal person.

Ralph also mentioned that the motivation for grad school was to have a "Plan B" so to speak. "You always have to have a plan B, even if you don't want it, just have it there as there...And that's kind of why the masters is there, it goes in help with my goal but then it gives me another plan B to execute on top of that."

Right time: Ralph: "But yeah, it was after the kids: done, they started elementary school and that's kind of when they developed their own personalities and said, alright, we are done with you Dad. So sad." [Laughing]

Another participant was motivated by the notion that they would achieve a goal that only the degree would give.

Martin: really the only way to continue to move up in the group that I'm in is to become a project manager or in some way, give the higher degree so that I can move up in hierarchy of managing people, which honestly, an MBA will be fine for that but because I don't have an engineering background, my undergraduate degree is Bachelor of Arts, they would not allow me to move up without having a science degree.

Clay: "as a consultant, or like a software engineer and developer, I can make so much money. I pretty well hit the ceiling on that, but if I add data science to my skillset, that number goes up even higher." As well, Carson noted that a master's degree in certain fields was a prerequisite to practice. "The reason I can't really say they [experiences between undergraduate and graduate school] affected my decision, truly affected my decision, to go to graduate school is because these days... a master's in structural engineering is becoming more and more of a prerequisite to become a civil structural engineer." Making oneself more marketable was a common response. Ralph said, "as I'm getting closer to making the application to the FAA, I think having that masters is just the icing on the cake on top of that, and say, hey, look I got a masters in this, I have done recent school work on it... that's what I'm using as my basis for trying to get the approval."

Reasons for waiting to get an advanced degree

For some participants, the idea of graduate school directly from undergraduate work was unpalatable. For some it was the feeling of burnout, that more coursework was unthinkable at that time in their life. Donna:

"Yes, my first job I worked with the patent office. I was in the DC area, and I was

... What I want to do, IP law. That's why I hopped in there. I was burnt out from undergrad so I didn't want to apply to law school, which worked out because I actually found out I didn't like IP.”

Others wanted to know what the world was like, also tied to burnout. Rose:

“Well, when I ended undergrad ... two reasons. One, I had a job that paid well so there was no reason to take on debt when I had that job. The other reason was I was just tired of college. I was ready to get out and see what the real world was like and start making money. Yeah. There was zero motivation for me to do the master's at that time.”

Returners also mentioned that having the gap allowed them to nurture a direction that they did not have directly out of undergrad. This infers that motivation was not evident at first, but life circumstances made the case for graduate school or further study. Rose:

When I did the undergrad, it was more like, I like math and science, and engineering pays well and there wasn't [sic] any negative thoughts, but there wasn't any specific guiding principal like this is why I want to do engineering. I went through the classes. Passing classes was one thing I did great, but I never had the deeper motivation of what I really wanted to do with it.

And Walter:

[B]ecause I had that work experience, I was able to know the areas that I was weak, or areas that would help me back at my job. And so I could pick those classes, compared to other friends that I had who came straight out of grad school, or straight out of undergrad. And they're like, "I'm not sure I want to do with my career or with my life." And so they just take what they think are interesting without knowing how they might be used in the future.

Returner participants also had the luxury of experience working for a time before returning to graduate school. This allowed them to identify gaps in their knowledge or in their workplace that a graduate degree would help them address. Walter also observed that there were areas where he felt he needed more education in order to better contribute. This understanding was immediate and motivating, but life circumstances made it difficult to attend graduate school until much later:

The more I learned at work I was like, "I need to learn more, because I don't know a lot of this stuff." I considered going back to grad school for a few years and I was, I don't know. I had all this other stuff going on in my life. Working on this house. I just wasn't ready to go back. I was like I don't want to have to do that again because school was hard and it's very time consuming and it's like all of your energy.

The motivation for returning was fueled by the understanding participants gained just by having time in industry. Another finding was that returners go to graduate school more for themselves and their own goals rather than believing it was expected of them. Felipe said, “In grad school, it was my own choice. And my own efforts to figure out how to do it.” Rose said, “I was definitely much more motivated when I entered the grad program. I had had a few years of experience and

was like, okay this is where I'm really interested.”

Finally, motivation also revolved around family. Both Ralph and Clay mentioned that they were modeling better for their children that education is important by going to school than just talking about it would do. Ralph said, “Yeah, and working that within the life, so now I've used it also as an example to my kids, and say, hey, look, I'm going back and this is what I am doing, this is how I'm getting my grades up.” Clay said, “For my kids, my kids are young, ten, eight, and six. To say I'm doing schoolwork, and see that I value that, and that's important, I hope from them that there's value in doing schoolwork, and value too going further, and continuing education, and continuing to build yourself, and to grow.”

Direct Pathways' motivation to Return

Direct Pathway motivation was slightly more nuanced than Returner. Because the direct pathway students were earlier in their career trajectory, career advancement and credentialing was important. Some participants realized that the master's degree would give them the prerequisites necessary for specific roles. One was management. Harry said,

“I want to understand enough of the engineering that I can communicate and understand the engineers and get done what needs to get done and still drop into an engineering role if I need to. But I want to have enough other skills outside of engineering that I can help coordinate engineers and work with other groups and teams.”

Another identified need was in the area of design-heavy positions. Mark decided that because of his experiences in industry that a master's was going to allow him the opportunity to advance in the area in which he felt most interested.

“I found out really when I was working out in industry that in order to do design work, I really needed at least a masters. It was going to be a very uphill battle if I tried to go get a design position right out, basically with just a bachelors, so yeah. That pretty much drove my decisions to just go straight for a masters.”

The notion of going into business for oneself, or consulting, played up the entrepreneurial mindset for some Direct Pathway. Ken said,

“My long term goals are to be more entrepreneurial and the way I was thinking about it was, is somebody who has an idea for a business, are they going to come and trust somebody to build it out who has a masters or somebody who has a bachelors and I was thinking, nine times out of ten, especially in software engineering, they're going to go to somebody with a masters.”

On comparing the master's degree with the undergrad, Andrew felt that graduate study would support his understanding in design-heavy roles. “There were times where you're definitely thinking about load, and stuff like that, and how is it going through the part. I think those principles, but in general my undergraduate is very broad. You cover a lot of topics and stuff that's on the surface.” Andrew also stated,

“And so that's what sparked my interest in doing more computationally-intensive stuff. And so I took an artificial intelligence and machine learning class during my

senior year, and then when I was working, I realized that without a graduate degree, it's kind of difficult to do that kind of stuff, especially if you're going to do research or stuff like that, and how it applies to your job. And so I thought that going back to school would lead to better opportunities to do that.”

Some participants felt that the undergraduate degree is very broad and not very focused. Harry said, “You get through two classes of each of those and then you're done. You never get real true depth in any of them, but when you go to your Master's degree you say I want to study this area and I don't want to get a doctorate on it, but ... become a technical or a near technical expert in a certain area.”

One topic that Direct Pathway touched on was the notion of networking. Graduate school was seen a place to make connections across industry that may not be as easy to do when going straight into the work force. Parker said, “There's a lot of people in graduate school, a lot of connections across the industry.”

Students who are motivated to go to graduate school have realized that there is a specific discipline they want to get involved in, and they realize that further education is the way to do that. Maria said, “I wanted to transition from aerospace to computer science because I just realized that's what I like to do...what I like to do is program.”

Direct pathway students who had started out with an undergraduate degree in “hard” sciences like chemistry or mathematics realized that the way to apply their knowledge was to get an advanced degree in engineering in order to apply what they had learned in a practical way. Asher said, “I ended up deciding that I didn't want to do pure science, I wanted to apply it in, to get more applied you have to do engineering.”

Financial incentives and employer support

Students state that employer funding for graduate school was a great incentive to go to graduate school. They felt that this lowered the bar for them to attend graduate school with less risk. Andrew said, “People ... Their employers pay for it. I was like ‘Well, if you're going to pay for it ...’ I like school, I did well, I'm a pretty good student, and I have the time right now, so I was like ‘why the heck not?’”

Scholarships and stipends

Scholarships were also an incentive for direct pathway, who had the time, inclination, and life situation to allow them to attend graduate school. Ben said, “When I went to UVA, it was much more of a casual, relaxed sort of pace. I would still be doing interesting things because they had this cooperative research department between the mechanical and electrical engineering departments, which I was being offered a scholarship to. So, UVA gave me a full ride to the school, plus a living stipend to do research with them.”

Personal and intellectual Drivers

Undergraduate education did not fulfill students’ natural curiosity. Will said, “I just felt kind of unfulfilled with undergraduate, like my undergraduate ... what was being taught across the board, I guess. Not in a bad way. I liked everything I was learning but I just wanted more. It's like, I need more. I know I'll never do it if I don't do it right away, get my Master's.” As Will stated,

momentum as also a factor. As well, the expectations of family and trusted older people was also a factor in the motivation to go to graduate school. Paul said, "I would say it's probably because my parents and older siblings, all are highly educated, so it was sort of kinda [sic.] always expected."

Job dissatisfaction and life opportunity

Students who decided to go to graduate school did so because they could see that the current job they held, while utilizing skills, was not that satisfying. Martha said, "I spent about a year and a half in insurance. By chance, yeah. And it was enough motivation that I knew that was not what I wanted to do with my life. It was a good motivation to look for the next step." Others had jobs that, while providing a living wage, were not seen as what they wanted to do with their life. Eric was in-depth with his answer: "I worked as an assistant general manager at a Five Guys. I started there when I started my undergrad and I worked my way up, and I was like, 'You know, I could just not go to school and just be a GM (general manager).' They wanted me to be a GM, and I would've made okay money. You know what I'm saying? It was like that work was easy enough. I come in. I do my 40 hours. I get out. It was alright, you know? And then I started working in between my slight break and I was like, 'Hell no. Hell no.'" So in that respect, yeah. I learned that, that's not what I wanted to do. I guess it showed me I did still want something more and that perhaps grad school was the right answer."

Situational freedom

Particular life situations also allowed for the fulfillment of graduate school. Harry said, "I couldn't really beat the 'life opportunity,' that I had because I didn't have a family, I didn't have kids, I didn't have a job, I didn't have a house. I could pack up my entire life in two days and move down to Southern California not a problem."

Finally, one theme that was of interest, but not a common one for direct pathway was that graduate school was a way of deferring having to out into the world and work. Brett mentioned that "The choice of going to grad school almost was like a comforting one, because it was, one, scary going into the work world, the actual career, but also because none of my job offers were really ideal or maybe what I wanted to go into. I didn't want to work at a steel manufacturing plant, like in the Midwest or something." Proximity to family was also important to this participant.

For both Returner and Direct Pathway there are overlaps in making the decision about a particular program or school. Both R and DP mentioned the prestige of a particular school as well as the concentration of the program. Proximity to family and accommodations for spouses to obtain employment near the university was also a consideration. Both DP and R mentioned proximity to "tech hubs" such as Silicon Valley and Los Angeles. They both considered flexibility and schedule compatibility. Faculty expertise was a consideration in their choice of graduate program. For both R and DP, time to completion was a factor, but for DP it was how soon they could finish as well as whether they could combine an undergrad with a master's at the same time. For R it was the ability to stretch out the program. R were also interested in programs that did not require a thesis, while DP did not mention this. A final factor for R but not DP was the ability to enroll when they were ready, that is, the program offered a rolling enrollment process.

Discussion

Returners and Direct Pathway students were more alike than not in terms of motivation to attend graduate school. A common thread was the way to pay for graduate school. For both Returners and Direct Pathway who are currently employed, this is the employer. Direct Pathway also mentioned scholarships and stipends. This did not come up for Returners. Perhaps this is because they have a focus and goal of learning for a specific purpose, while Direct Pathway are enamored of the notion of advanced education in their general field or area of study. Employers paying for graduate school is a plus for the employer as well as the employee. There are limits to how many courses a student in industry can take, hence the returners' interest in extending schooling. Returners are more interested in graduate school that can accommodate their full-time work as well as their lives as witnessed in the notion of rolling enrollment and ease of admission and requirements. They are already motivated to attend graduate school. Once they decide, they want to start as soon as they can.

Waived standardized testing was important to Returners but did not come up in conversation with Direct Pathway. Does this mean they are not aware of this option, or that it does not matter to them? The reason was not clear. Returners are drawn to programs that will give weight to their experience in industry. DP don't have enough experience to be able to point to success in industry—yet. Many DP seemed to want to attend graduate school right away after undergrad, while more returners felt burned out after undergrad or wanted to have an income. Above all, motivation to return for both groups seems to be what the degree will do for them, rather than attainment for attainment's sake.

Another aspect that emerged from the data is that Direct Pathway are much more interested in finding opportunities for movement than are Returners. Networking events for them seem to be of interest, even after starting their master's programs. Allowing them the opportunity to see their learning applied in novel or unconventional ways might help programs sell themselves as conduits for collaboration and possible new positions in other fields.

Taking these aspects of the graduate school experience into account when recruiting students might help programs gain students in areas where they did not necessarily market for them, specifically, to Returners in areas where universities are not nearby. Online programs have gained in use since the pandemic, so this aspect of higher education is already in place.

Conclusion

Returners and Direct Pathway students have different motivations for going to graduate school. It would be of interest to know how both groups find the program for them. Research in this area would not only support the aim of the prospective student but also gives programs opportunities to increase enrollment. This research only included graduate students who obtained their undergraduate degrees and high school diplomas in the US. Students who have received degrees from other countries were not involved in this work. It is an area of research that may uncover different motivations and decision-making for these students.

Acknowledgements

Data collection and analysis for this work were funded by the National Science Foundation Grant [#1463825].

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