JULY 2024



College Credit Mobility

Student Voices and Staff Perspectives on Time, Technologies, and Transfer Processes

American Institutes for Research

Lillianna Carrera, Melissa Chavarria, Lynn Mellor, Kelle Parsons

rpk GROUP

Donna M. Desrochers, Muzhen Zhang





Contents

| Introduction | 1 |
|-------------------|----|
| Background | 1 |
| Study Overview | 2 |
| Findings | 3 |
| Final Thoughts | 10 |
| Appendix: Methods | 11 |
| References | 12 |

Exhibits

| Exhibit 1. | |
|---|---|
| The Transfer Exploration, Application, and Credit Evaluation Process | 4 |
| Exhibit 2. | |
| Time Investment in Transfer Decision Making: Student Responses | 5 |
| Exhibit 3. | |
| A Student's Time-Related Transcript Challenges in a Transfer Journey Map | 5 |
| Exhibit 4. | |
| When Transfer Students Learned About Credit Transfer | 7 |
| Exhibit 5. | |
| A Student's Credit Evaluation Notification Timeline in a Transfer Journey Man | 7 |

Introduction

Every year, hundreds of thousands of students transfer to new colleges (National Student Clearinghouse Research Center, 2024). These students may come directly from other 2- and 4-year institutions or may be returning after time away to attend to work, family, or other obligations. The success of these transitions should be a primary concern for colleges and state policymakers, all of whom share the goals of improving student affordability, increasing educational attainment, and effectively using public higher education funding.

Transfer students bring with them a collection of credit hours earned from other colleges or accelerated high school programs. However, these credit hours do not always transfer from one institution to another, or they may transfer but remain unused if they do not satisfy degree requirements at the transfer institution. As a result, these unused credit hours can present students with additional financial burdens and may lengthen their academic journey. This loss of time and money can also contribute to students dropping out before they earn their degrees.

Much of the focus on poor credit mobility centers on the financial cost to students. This study widens that lens to examine students' time and effort devoted to the transfer process, common transfer barriers, and the academic and career implications of credit loss. It also explores the institutional policies, processes, and technologies that impact student transfer and credit mobility. The study findings are based on interviews, either individually or through focus groups, with 16 transfer students and five college student support professionals who support transfer students.

Background

Community colleges are a common entry point to higher education, with many students intending to transfer to 4-year institutions (Horn & Skomsvold, 2011). However, there are several notable issues concerning transferring to another institution. A primary problem is the efficiency of credit mobility, which is the transferring of academic credits from one institution to another (Doyle, 2006; Monaghan & Attewell, 2015).

The most direct transfer pathways for students often fall within three main buckets: vertical transfers of community college students to 4-year institutions, lateral transfers that occur when students transfer between 2-year colleges or from one 4-year institution to another, and reverse transfers when students move from 4-year institutions to 2-year institutions.¹ In addition, some students who previously stopped attending college might return to higher education to enroll in the same or a different type of institution than where they were previously enrolled. Some transfers may be more complex, such as when students attended multiple institutions or earned their credits long ago, or the institutions to which the students are transferring are unfamiliar with their prior institution(s), course offerings, and potential course equivalencies.

Regardless of the complexities of student transfer, there are various policies and systems in place for transferring credit hours (Hodara et al., 2017). These vary by state, region, and institution, and can be challenging to maintain as pathways and majors change, therefore introducing complexities and inconsistencies that often prevent efficient credit transfer. As a result, many students lose some of their prior investment—in both time and money—during the transfer process. According to the United States Government Accountability Office (2017), transfer students lost 43% of their credit hours, on average, suggesting further challenges around affordability, momentum, time-to-degree, inefficient processes, and the expense of readministering learning. These challenges are further

¹ In this context, reverse transfer refers to students who transfer from a 4-year institution to a 2-year institution. This term does not refer to the practice in which an associate's degree is awarded retroactively after a student transfers from a 2-year institution to a 4-year institution, by applying credits earned at a 4-year institution to fulfill the requirements for an associate's degree.

exacerbated when students take more uncommon transfer pathways. For example, students transferring from 2-year public to 4-year public colleges lost an average of 22% of their credits, whereas students who transferred from 2-year private for-profit to 2-year public colleges lost an average of 97% of their credits.

This study provides new qualitative and contextual information on credit mobility by examining students' perspectives on their transfer experiences. It explores transfer students' investment of time, the timing of information, technologies used, the impact of credit transfer on decision making, and student satisfaction with credits transferred.

Study Overview

The American Institutes for Research® and rpk GROUP jointly conducted this study to improve understanding of students' experiences and time investment with the college transfer process, and the role of institutional policies, processes, and technologies. Expanding the understanding of the institutional barriers that exist during the transfer process can help identify ways to improve the transfer process, reduce student burden, and increase the mobility of academic credit across institutions. Measuring time expended in the transfer process can inform our understanding of how technology platforms might influence students' decision making related to transferring.

The study included virtual interviews and an online journey map activity (see text box) with 16 students who had transferred to a 2- or 4-year public college or university or were in the process of transferring from a public or private nonprofit institution. The study also included interviews with five public 4-year university staff members who support student transfer and credit evaluation in their roles as transfer advisors, academic counselors, or associate registrars (see the appendix for a description of the methods).

What's a "Journey Map"?

The students participating in this study were asked to create a visual description, or "journey map," of their college transfer process using an online template designed to capture their experiences.

Students provided information on their transfer activities, the tools and resources they used, and the time these various tasks required. Students mapped their journey through three stages of the transfer process: prior to application, during the application process, and after their transfer application(s) were submitted. The journey mapping activity was designed to help students reflect upon and share their transfer experiences.

The study focused on understanding the following:

- 1. The time students invest in the transfer process.
- 2. The internal institutional process for student transfer and credit evaluation, including when students learn about acceptance of their transfer credits.
- 3. Whether the transfer of credits impacts students' choice of college.
- 4. The credit-mobility-related technologies colleges and universities offer and the role they play in a student's transfer process.
- 5. The primary institutional obstacles in the transfer and credit evaluation process and potential opportunities to improve students' experiences.

The key findings from the interviews and student journey map are shared below.

Findings

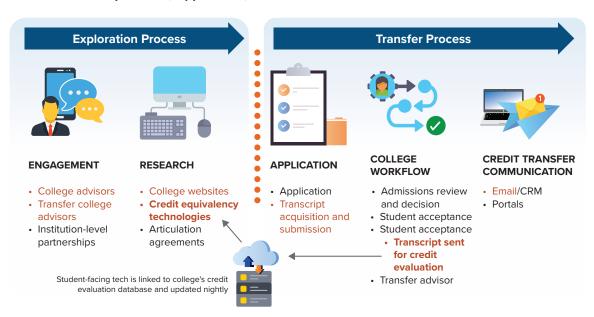
Students begin to informally engage in the transfer process well before they submit their applications. As shown in *Exhibit* 1, the student's *exploration process* (during which they consider whether and where to transfer) can be informed by tools, articulation agreements, and partnerships provided by institutions, while the *transfer process* formally begins with a student applying for admission. Our interviews with students suggest that they view these as related parts of their process, so this report aims to consider both parts of the process holistically.

Before students transfer, they begin an exploration process that includes academic planning, conducting research by visiting the websites of colleges or universities to which they might transfer, ensuring they meet transfer requirements, and attending information sessions and visiting with academic advisors—among other steps. Students then begin the transfer process by preparing their application materials. At many open access institutions, an application can be submitted right up to the start of the semester in which a student intends to enroll. But at many 4-year institutions, the application deadline is months in advance of the beginning of the semester. Regardless of the application deadline, all students must submit prior transcripts with their applications.

5 Key Findings

- The steps leading up to a student successfully transferring make up a complex process that includes a significant time investment by students.
- Credit evaluation occurs at the very end of the admissions process, which prevents students from receiving timely information they could use in enrollment decision making.
- Student interviewees reported that credit transfer had little impact on their decision making, but in hindsight some wished they had considered it.
- Transfer technologies are used by students when available and accessible. Credit evaluation tools are less frequently used, but are especially valuable when linked to internal credit evaluation systems.
- Students want both general and personalized information about the transfer process, courses, and credit hours, which they often solicit from staff at their pre- and post-transfer institutions.

Exhibit 1. The Transfer Exploration, Application, and Credit Evaluation Process



Note. The red text highlights key tools and processes in the communication and transmission of information on credit transfer.

The *credit evaluation process* does not begin until the student accepts the college or university's admission offer. After indicating acceptance, the admissions office sends the student's transcripts to the registrar's office for the official credit evaluation. Typically, the registrar evaluates the student's prior courses and credits as reported on their official transcript(s) and determines which credits will transfer to their institution.

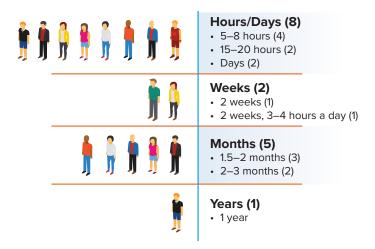
The registrar also determines how credits can be applied to the student's academic major at their college. For instance, if the institution to which the student is transferring has an equivalent course, they may grant the student credit equivalent to that course, or credit may be awarded as general credit with no specific equivalency. In this case, the credit may not apply toward any specific degree requirements, but could be used as elective credit to meet total credit requirements for a degree. In some cases, the registrar's office engages individual departments or colleges on campus to help determine whether certain credits satisfy the course requirements for a specific major within a degree program. Once this credit evaluation is complete, the student is notified. The timing and implications of this process are discussed in greater detail below.

The steps leading up to a student successfully transferring make up a complex process that includes a significant time investment by students.

The students interviewed in this study encountered a mix of streamlined and intricate processes while navigating the college transfer pathway. Most students found that submitting applications, a specific step that has been optimized through the adoption of technology-based application portals, was "quick and easy." So while the application itself required little time, students had already invested varying amounts of time in advance of applying.

The same transfer students also reported a wide range of time investments researching their transfer options—anywhere from several hours to a year-long endeavor. The majority (50%) of the transfer students interviewed spent hours or days deciding where they would apply to transfer, and more than 60% decided within weeks (see *Exhibit 2*).

Exhibit 2. Time Investment in Transfer Decision Making: Student Responses

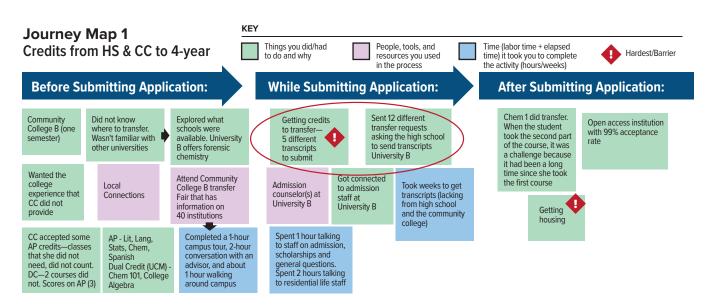


Note. The numbers in parentheses represent the number of student respondents in each category.

The variability in student time investments was largely related to the complexity of independent tasks. For instance, requesting and submitting transcripts from previous institutions proved to be a multifaceted endeavor. While some of the interviewees found it relatively easy (though processes often included nominal fees and potential wait times, if electronic versions were not an option), others faced significant challenges that demanded substantial effort, time, and persistence.

Some specific barriers identified by the transfer students interviewed included trying to transfer during a holiday break, when admission or registrar staff were not available, and, in some situations, when they had to keep following up with staff due to broken processes. One student had to request transcripts from multiple institutions to capture both college and AP credits previously earned, and spent weeks making multiple requests to procure all of the required transcripts (see *Exhibit 3*).

Exhibit 3. A Student's Time-Related Transcript Challenges in a Transfer Journey Map



Note. The red circle highlights a transcript submission barrier on this student's journey.

Additional challenges arose when credits were earned long ago. For example, one transfer student had to go through an in-person academic renewal process to address previous substandard grades on their record with staff from their previous institutions, requiring 2 to 3 months of time. Other students encountered a situation in which the institutions' portals rejected their transcripts, requiring additional time and attention from the students, as they needed to both notice the issue and identify the individual at the institution who could resolve it.

"I had to go to the other institutions that I was at. I requested the academic renewal, so those transcripts could be sent to [my current college] in order to count them for my credit allotment to be able to transfer. All of this was probably over a 2-month process."

Credit evaluation occurs at the very end of the admissions process, which prevents students from receiving timely information they could use in enrollment decision making.

The official credit evaluation process begins after a student has accepted an offer of admission. The process involves multiple steps and can engage a variety of staff and faculty, including admissions officers who process the transcripts, transcript analysts or evaluators (typically housed in the registrar's office) examining them for course equivalencies, and faculty who may weigh in on credit determinations for unfamiliar courses. All of the staff interviewed reported their colleges had course equivalency databases, but manual verification was required to certify the equivalency, which contributed to the length of the verification process.

According to staff interviewed, it is difficult for transcript evaluators to estimate the "average" time to evaluate a student transcript and determine which courses should earn credit at their institution. Staff indicated that if an articulation agreement exists, or if other students have previously transferred from the same college and a robust set of course equivalencies exists in the college's database, the evaluation may take as little as 30 minutes. But when courses are unknown to the evaluator, research is required that can significantly extend the hours spent and the length of time until the review is completed.

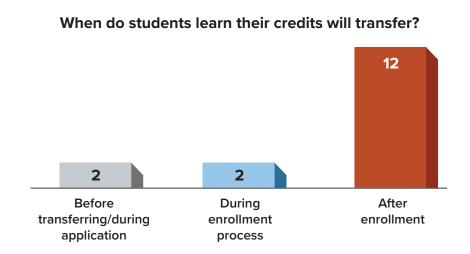
The evaluators indicated they may acquire the additional information through an internet search for course descriptions or by engaging other staff or faculty on their own campus. A transfer advisor may be asked to contact the student for additional information, such as a course syllabus. Some colleges rely more heavily than others on faculty evaluations. In those instances, the course information is sent to the department, and faculty determine whether the course credit is equivalent to a course the college offers.

Several staff reported that their college now permits the submission of unofficial transcripts with student applications. While this can reduce student anxiety during the application process because the students are no longer worried about whether their official transcript arrived, it still does not speed up the credit evaluation process. The registrar's office continues to request official transcripts for evaluation and does not receive them until after the students have been accepted and indicate they intend to enroll.

Student support staff workflow can also influence the elapsed time between transcript submissions and final evaluation. The transcripts of current-semester transfer students are typically prioritized so they can be completed before students enroll, even though a student enrolling the following semester may have submitted their transcripts

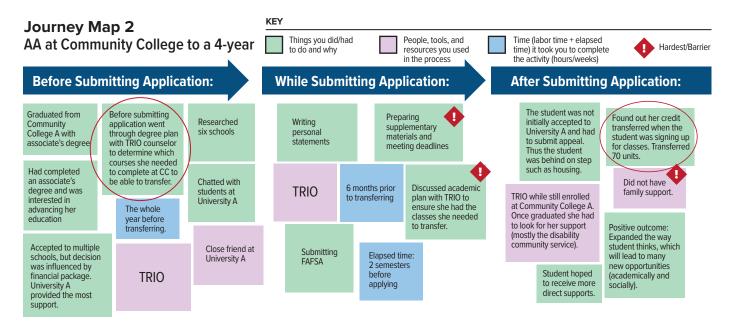
earlier. At open access institutions, transcript submission may occur just days before the start of the semester, leaving little time for staff to evaluate transcripts before students select and enroll in classes.

Exhibit 4. When Transfer Students Learned About Credit Transfer



The students interviewed generally felt that knowing how or whether their credits would transfer *before* they decide to transfer would be helpful. However, most interviewees only found out how their credits would or would not transfer after they already enrolled at their new institution (see *Exhibit 4*). Students who connected with transfer counselors during the application process reported that these counselors were *informative* but not definitive, meaning many of the students received "unofficial" information about the credits that may or may not transfer.

Exhibit 5. A Student's Credit Evaluation Notification Timeline in a Transfer Journey Map



Note. The red circle highlight the elapsed time between seeking and receiving credit transfer information on this student's journey. 'TRIO' refers to a group of eight federal programs intended to expand college access to students from disadvantaged backgrounds through outreach and student services.

Most interviewees learned exactly which credits would transfer as they registered for classes or after starting classes. The journey map in *Exhibit 5* illustrates the path of a student who previously earned an associate's degree but did not learn until registering for classes that all 70 credits transferred. This information came at the end of a carefully planned transfer process where the student proactively assessed whether each community college class would transfer before enrolling. The "official" credit evaluation information was received in time to optimize their 4-year course selections even if it did not arrive in time to influence their college selection decision.

Students were asked how they learned which credits officially transferred. Notably, there was little systematic notification of credit transfer among the transfer students interviewed. Most students mentioned that notification of their credit transfer came directly from advisors, or through the student portal. Some students mentioned that as prospective transfer students they were unaware their credits might not automatically transfer. Nonetheless, most transfer students interviewed had all credits transfer and applied towards their degree (ranging from 30 to 70 credits), though some reported losing small numbers of credit hours.

Staff interviewees similarly reported that their colleges used various approaches to notify transfer students about their transfer credit. Some colleges send an email, while others post the information to a student portal. Regardless of the method, transfer students receive the information after they are accepted and have a college email address or have been granted access to the portal.

Internal processes, such as only officially evaluating credits after students are admitted, can result in staff workflow cycles that lead to evaluation inefficiencies and timeline delays at particular points in the year, preventing more timely notification to students about how their credits transfer. While the elapsed time for an average evaluation may only take 1 to 2 weeks, it can depend on the time of year and the complexity of the evaluation.

Student interviewees reported that credit transfer had little impact on their decision making, but in hindsight some wished they had considered it.

When the student interviewees described what factored into *which college* they chose to transfer to, they identified a variety of reasons, but few specifically considered credit transferability. Most cited immediate cost (tuition) or scholarship opportunities, location, family or friends who were enrolled at that institution, specific academic programs, or flexible options like online courses.

Two of the students interviewed indicated they made strategic decisions around credit mobility during their exploratory phase. One selected an institution based on where they believed all prior credits would apply to the bachelor's degree of their choice. Another student organized their pre-transfer courses to align with the degree pathway at their planned transfer institution. That said, some transfer students interviewed wished they had considered credit transferability during their exploratory phase. Others shared that they would not have transferred to the college they did if they had known their credits would not transfer.

Institutions can streamline the communication and improve the transparency of information to transfer students by considering all communications with possible transfer students and designing outreach that shares credit transfer information at an earlier stage. This would allow transfer students to experience a smoother transfer process in which the opportunities and requirements are transparent before applying.

Transfer technologies are used by students when available and accessible. Credit equivalency tools are less frequently used, but are especially valuable when linked to internal credit evaluation systems.

Students reported using available technologies during the exploratory phase and for requesting transcripts. Nearly all interviewees reported using online college transcript request systems, which they found relatively simple and efficient to use.

Credit equivalency technologies, which provide unofficial information about how courses should transfer, were less commonly used by students prior to submitting their applications. Only a few transfer students were aware of their existence and purpose, even though several of the institutions (or state systems) to which the students transferred offered publicly available credit equivalency tools.

All staff who were interviewed reported that their colleges had student-facing credit equivalency tools. These tools are connected to the systems that internal evaluators use, and are updated nightly. However, these equivalency tools often indicate that results are unofficial or preliminary, which may communicate to students that they cannot trust the accuracy of these tools when in fact they should be quite accurate for course mappings that already exist. Improved communication about the availability and reliability of these tools may be required to boost utilization.

Technology platforms can be very useful for transfer students if placed in the right location on the school's website and connected with the transfer process. As this study noted, supporting transfer students with access to this information before deciding where to apply and enroll was most useful in aiding their decision-making process. In addition, increasing the visibility of these tools is the most equitable way to provide information so that the student can make an upfront decision before applying, thus easing the transfer process.

Students want both general and personalized information about the transfer process, courses, and credit hours, which they often solicit from staff at their preand post-transfer institutions.

Transfer students interviewed commonly described the importance of support staff such as advisors or transfer counselors. These staff—often at their "sending" institution, but sometimes located at their "receiving" institution—served as critical sources of information and guidance as students researched options, and then applied and enrolled at their new institutions.

Because the transfer process is complex, many students interviewed described seeking and receiving both *general* information and *personalized* information unique to their circumstances. While interviewees described using both websites and student support staff to obtain *general* information about the transfer process, many student interviewees described unique circumstances that led to them receiving *personalized* information to assist with barriers or troubleshoot problems. For example, student interviewees cited advisors as a primary source of information to learn that not all credits might transfer, as well as what the requirements might be at different institutions to understand credit acceptance. In addition, many interviewees cited an advisor at their community college as helping them assess, unofficially, how their unique set of credits would transfer to a specific institution(s), using the best available information about credit acceptance (sometimes basic websites, sometimes portals for within-system transfers). Generally, these findings suggest a role for both meaningful technology tools and human advisors that can provide important personalized context and support for effective use of transfer tools.

Final Thoughts

Improving credit mobility processes can benefit students in multiple ways beyond just cost savings from credits hours that go unused at the end of the transfer process. Students devote their time to the transfer process; technology, tools, and institutions themselves can make this process easier, but also sometimes make it harder. And typically, students are not fully informed on all of the processes despite the time and effort expended on them—particularly around the transferability of academic credit they have previously earned.

Technology is a critical element in processing and democratizing information on college transfer. Technology has lessened many pain points in the transfer application and transcript submission process. But even when credit equivalency technologies are available, students do not seem to benefit from the advance information they can provide. Rebuilding processes with a student-centered perspective could yield new campus protocols, much like the trend toward initially accepting unoffical transcripts. For example, colleges could consider how to marry this transcript information with their existing technologies to provide students with an unoffical "preliminary assessment" of transfer credit along with their notification of acceptance.

Communication and messaging must also accompany any technology-focused solutions. Simply building tools to provide additional information will not improve the transfer process if students are not using them. Institutions and systems with credit evaluation portals should ensure they are regularly informing students and advisors about these tools. Furthermore, they should clearly communicate the accuracy of these tools by disclosing whether they are linked to internal evaluation databases and where their greatest limitations likley exist.

Higher education bears the responsibility of improving the processes, tools, and communication transfer students receive. Timely and transparent information, supported by technology, could be used to help students make informed transfer decisions. Knowing how prior credits apply as students research their transfer options could prevent students from losing money and increasing time to degree. As more and more students' college journeys weave though multiple institutions, ensuring the success and timeliness of the transfer process needs to be a priority to improve student success and affordability.

APPENDIX: METHODS

Data Sources

Several sources of data were utilized to analyze students' transfer experience, with a focus on student time and effort, credit transfer barriers, and the academic and career implications of credit loss. This study primarily collected data from student interviews, transfer journey maps completed by students, and student support staff interviews.

Transfer student interviews provided firsthand information on students' transfer experience, challenges, obstacles, and credit transfer outcomes. Journey maps provided a visualized map to illustrate each individual's transfer experience, including details on timeline, difficulties, and resources and tools available. In addition, student support staff interview data presented the unique transfer processes, systems, and resources available in different higher education institutions, as well as insights on potential solutions to the existing challenges.

Methods

Student interviews and journey maps.

Recruitment emails, along with a flyer with information on this study, were sent to administrators at six institutions, located in different regions across the U.S. Institutions that showed interest in participating forwarded the recruitment flyer to their transfer students. Besides basic information on the study, the recruitment flyer contained a QR code that led to a study sign-up form. The form required basic biographical and contact information. Transfer students who signed up were then assigned to focus groups depending on their transfer types and scheduled interviews based on availability. Interviews were conducted through either a 60-minute student group interview (with two to three transfer students per group), or a 60-minute individual student interview. Due to scheduling difficulties, most interviews were performed as individual student interviews.

During the interviews, each student participated in a transfer journey mapping activity on Jamboard and a semi-structured discussion about their transfer experience. After the interviews, researchers followed up with a thank-you note and a \$40 gift card for each participant.

Data on several types of transfer activities were captured in the student interviews: vertical transfers (from 2-year to 4-year institutions), lateral transfers (from 2-year to 2-year, or from 4-year to 4-year institutions), and reverse transfers (from 4-year to 2-year institutions). Overall, 16 transfer students completed the interviews and journey mapping activities. Among all participants, one student was in the process of transferring and 15 students had recently transferred.

Student support staff interviews.

Invitation emails were sent to transfer professionals at the institutions where transfer students participated in the student interviews. Student support staff were invited to participate in a 60-minute, one-on-one interview to share their perspectives on topics such as the transfer process, credit mobility, resources, and obstacles. Five student support staff working in transfer-adjacent positions from three institutions attended the staff interviews. The student support staff interviewed included staff in enrollment management and registrar's offices, as well as transfer advisors and other related roles.

Analysis

All interviews were recorded after student and student support staff interviewees verbally consented to the recording. After the interviews were completed, the researchers of this study downloaded a copy of the recording and the related transfer journey map (student interviews only). *Rev.com* was utilized to transcribe each interview. The research team utilized interview questions to develop possible codes, and finalized these codes based on themes that emerged from interviews. Later, the transcribed conversation was coded by members of the research team through NVivo and grouped by the key questions that the data addresses. Each research team member was assigned to code one interview. Coding reports were then examined by research team members. Besides the interviews, the related journey maps that were created were examined by the research team to create a full overview of the entire transfer experience. Themes that emerged from the journey maps were compared with the transcribed interviews.

Limitations

The study used a small purposive sample of students and university staff. Therefore, the sample is not representative of all students who transfer, or representative of staff who support students in the transfer process.

References

- Doyle, W. R. (2006). Community college transfers and college graduation: Whose choices matter most? Change: *The Magazine of Higher Learning, 38*(3), 56–58.
- Hodara, M., Martinez-Wenzl, M., Stevens, D., & Mazzeo, C. (2017). Exploring credit mobility and major-specific pathways: A policy analysis and student perspective on community college to university transfer. *Community College Review, 45*(4), 331–349.
- Horn L., & Skomsvold P. (2011). *Web tables: Community college student outcomes: 1994–2009* (NCES 2012-253). Retrieved from https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2012253
- Monaghan, D. B., & Attewell, P. (2015). The community college route to the bachelor's degree. *Educational Evaluation and Policy Analysis*, 37, 70–91.
- National Student Clearinghouse Research Center. (2024). *Transfer and progress: Fall 2023 report*. https://nscresearchcenter.org/transfer-and-progress/
- United States Government Accountability Office. (2017). *Higher education, students need more information to help reduce challenges in transferring college credits*. United States Government Accountability Office.

About the American Institutes for Research®

Established in 1946, the American Institutes for Research® (AIR®) is a nonpartisan, not-for-profit institution that conducts behavioral and social science research and delivers technical assistance both domestically and internationally in the areas of education, health, and the workforce. AIR's work is driven by its mission to generate and use rigorous evidence that contributes to a better, more equitable world. With headquarters in Arlington, Virginia, AIR has offices across the U.S. and abroad. For more information, visit AIR.ORG.

About rpk GROUP

rpk GROUP is a leading consulting and advisory firm in higher education, supporting institutions, systems, and organizations with their growth strategies by focusing on Mission, Market, and Margin®. For more information, visit www.rpkgroup.com



rpk GROUP

626C Admiral Drive, Suite 511
Annapolis, MD 21401
info@rpkgroup.com | www.rpkgroup.com



AIR® Headquarters

1400 Crystal Drive, 10th Floor Arlington, VA 22202-3289 +1.202.403.5000 | AIR.ORG

Notice of Trademark: "American Institutes for Research" and "AIR" are registered trademarks. All other brand, product, or company names are trademarks or registered trademarks of their respective owners.

Copyright © 2024 American Institutes for Research®. All rights reserved. No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, website display, or other electronic or mechanical methods, without the prior written permission of the American Institutes for Research. For permission requests, please use the Contact Us form on AIR.ORG.

This report is based on research funded by the Bill & Melinda Gates Foundation. The findings and conclusions contained within are those of the authors and do not necessarily reflect positions or policies of the Bill & Melinda Gates Foundation.