

Evaluating and Addressing Technology-Related Barriers to Transfer Student Success

By Olivia Tufo and Nicholas Fuselier

Introduction

Transfer and student mobility are longstanding and increasingly important features and sometimes challenges of the U.S. higher education system. Students move between institutions for many reasons, including affordability, academic opportunity, and changes in career goals. In fact, the National Student Clearinghouse Research Center found that nearly one-third of first-time college students transfer to another institution within five-to-six years of initial enrollment¹. Importantly, transfer is not limited to a single direction. There are three primary ways that transfer is experienced by students: vertical transfer, which refers to students transferring from a community college to a four-year institution; lateral transfer, which refers to students transferring between two community colleges or two four-year institutions; and reverse transfer, which refers to students transferring from a four-year institution to a community college².

Technology is increasingly intertwined within the most common impediments to transfer. Students and advisors rely on institutional websites, course catalogues, existing articulation agreements, degree-audit processes, student information systems, advising platforms, and other technologies when navigating the transfer process. At its best, when these technologies are optimized, students and advisors can utilize these tools to navigate the process efficiently.

This is the second in a four-part series that highlights findings from the **Technology and Partnerships for Transfer Success** initiative that explored how technology and cross-institutional partnerships can improve transfer pathways and student outcomes. The briefs share insights and lessons to inform efforts to make credit transfer more seamless, transparent, and effective.



Learn more at wiche.edu/technology-partnerships-for-transfer-success.

However, institutional technologies are often not optimized for transfer. Information on institutional websites may be outdated, technology implementation on campus may be fragmented, and some processes may remain more manual than automated. Data sharing across technology platforms, not to mention across institutions, may simply not be possible. Notably, these challenges impact both the experiences of a student undergoing the transfer process as well as the institutions trying to facilitate transfer for a given student.

The Technology and Partnerships for Transfer Success initiative by the Western Interstate Commission for Higher Education (WICHE) was designed to address some of

these challenges while also leveraging the opportunity for enhancing technology to ease the transfer process. As a result of this initiative, four primary areas in which technology consequentially intersects with the transfer student experience were identified: (a) information and navigation; (b) credit mobility complexity; (c) technology-enabled advising and degree planning; and (d) data sharing and institutional coordination.

Importantly, these areas are interconnected. For example, a student who cannot easily determine how a course will transfer to a receiving institution (i.e., the institution to which they are transferring), may seek assistance from an advisor at that institution. The advisor will need to consult multiple systems, likely at both the sending institution and the receiving institution, to determine course equivalency and degree applicability. If the relevant information within those systems is not available, the advisor may need to manually reconcile information to arrive at a determination. Depending on the course, the institution's evaluation process may include faculty member input. Although the complexity of this process is a result of institutional processes and technology systems the student never sees, the resulting friction of this process is experienced firsthand by the student.

Information and Navigation

Transferring from one institution to another can be a complicated, bureaucratic process. A foundational problem that students must navigate in the transfer process is the seemingly simple yet often-too-complicated task of gathering accessible and accurate information.

Students may need to determine:

- Which articulation agreements are available
- Which institutions accept their credits
- Which of their individual courses have established equivalencies
- How their transferred courses will apply to their intended major
- Transfer admissions and application requirements
- Relevant deadlines
- Financial aid and scholarship opportunities
- Residency requirements

Much of this information should be available online via institutional websites. However, the availability of information does not necessarily mean that it is useful. For example, the Community College Research Center's research on community college websites, particularly in the state of Texas, found substantial variation in the accessibility and usefulness of transfer information³.

The distinction between information being available versus information being useful and actionable has been discussed throughout this initiative. Project participants described transfer pathways that require students to make critical decisions fairly early in their academic careers because different receiving institutions have different requirements. For example, in WICHE's culminating focus group with project participants, stakeholders discussed the state's efforts at creating a 2+2 pathway through the Associate of Business (ABUS) degree that is designed to map directly into a bachelor's degree in business-related areas.

Even when designed with transfer students in mind, they noted that:

"Students need to understand that they need to pick their university after [completing] 30 credits. If you decide later, you're going to have duplicate credits... We call it the ABUS, but to

make sure they don't duplicate credit, they need to make that decision early on. The closer we get to 2+2, the tighter their pathway is."

This example illustrates the limitations of simply providing students with more information. Information about the ABUS is readily available on institutional websites, and students may be able to locate this information. However, they must also have an understanding of the complex differences that exist across different institutions and how those differences may impact their transfer experience. Although an optimized use of technology could potentially reduce this burden, this is not automatic or guaranteed. Technology cannot simply make the complex information innate in the transfer process easier to understand for students. The central challenge is, therefore, not simply about information access; rather, it is about information navigation and utility.

Project Example: Dakota State University and Lake Area Technical College

Dakota State University (DSU) and Lake Area Technical College (LATC)'s project goal was to integrate the Transfer Evaluation System (TES) and Transferology platform at LATC so that DSU and LATC have a shared software solution to facilitate the transfer of students who have earned their Associate of Applied Science (AAS) into applicable four-year STEM degree programs. In 2022, the South Dakota Board of Regents (SDBOR) revised its transfer policy to allow regental universities to accept technical courses and AAS degrees through transfer from colleges affiliated with the South Dakota Board of Technical Education. Despite the institutions being just 65 miles apart, and the state, region, and federal workforce shortages in fields related to computer and cyber science that demand upward transfer between applied technical programs and their closely aligned

four-year programs, the institutions did not share a close transfer relationship as a result of the prohibition against regental universities accepting technical courses prior to the revision.

The project participants reflected that one of the most impactful aspects of the project was the intentional efforts they made to strengthen the partnership between DSU and LATC faculty and staff. The project participants conducted multiple site visits that allowed faculty to collaborate in-person, building trust and alignment in the programs identified for this project.

In their final report, the project participants reflected:

"We have the same goals in serving students to achieve their goals and aspirations. Working together to help students find their path has been rewarding for our teams."

Credit Mobility Complexity

Put simply, credit mobility is at the center of transfer student success. Students reasonably expect that all coursework completed, regardless of the institution, will contribute to their educational goals. Many students assume that courses completed at one institution will count at another institution. However, differences across institutions can make the movement and applicability of credit surprisingly complicated, posing a crucial barrier to the transfer experience.

Institutions may differ in:

- Course numbering and coding
- Course titles and descriptions
- Credit hour conventions
- General education requirements

- Degree program requirements
- Transcript formats
- Student information systems
- Degree audit systems
- Data standards
- Processes for evaluating prior coursework

Importantly, transferability and applicability are not the same thing. A receiving institution may accept a course as transferable credit; however, that credit may not be applicable to that student's intended degree program. This leads to students accumulating excess credits that appear on their transcript but do not advance them towards completion. Project participants noted this as a persistent problem.

For example, in our culminating focus group, a participant in Arizona noted that:

"We do some degree of surveys of our students to get some picture of their experiences. We know our average transfer student carries 84 credits, which is 20 more than they need."

Solely counting credits that transferred is not an adequate measure of transfer success. Institutions must better account specifically for credits that apply toward degree progress. Technology can help address this challenge through automated course equivalency tools, curriculum mapping, accurate transcript evaluation, and degree audit integration. When designed in user-friendly ways, these technology-assisted evaluation tools can help students and advisors navigate transfer in service of degree completion. In fact, research has shown that students will use transfer technologies when they are available, and those tools are optimized when they are linked to internal credit evaluation systems⁴.

Still, due to the immense complexity of credit mobility, automating these processes will have innate limitations. To be sure, they

cannot be treated as the final authority. Staff members, likely in the registrar's office or an advisor, will still need to verify information to ensure accuracy.

In WICHE's culminating focus group, a participant in Wyoming noted:

"It's great if technology gives us a window into students who may be candidates [for transfer], but we're always going to check. We're always going to check the SIS, and we're always going to go to our record of truth. We only have three staff, and if we get 500 transfer requests in a term, that's not sustainable."

This point illustrates the complexity embedded in the credit mobility process. In addition to effective technology to conduct initial course equivalency evaluations and program applicability, institutions must often rely on staff members to be the final method of verification.

Project Example: University of Northern Colorado and Laramie County Community College

The University of Northern Colorado (UNC) and Laramie County Community College (LCCC)*, despite being in different states, are only 50 miles apart. Students who wish to transfer between the two institutions cannot leverage the Wyoming in-state transfer tool called WyoTransfer to evaluate how their credits will transfer. For this project, the institutions invested in Transferology by CollegeSource to improve the visibility of the pathway between the two institutions and support student advising. LCCC found that, on average, one in four of their students are transferring, and the aim of this project was to improve outcomes for those students who want to transfer out of state. One metric that arose during the project that attracted WICHE staff attention was that a significant number of transfer students to and from LCCC are lateral transfers. One of

LCCC's most significant transfer partners is Casper College, another Wyoming public two-year community college located more than 180 miles away. Another significant number of transfer students to LCCC are reverse transfer students from the University of Wyoming. A critical question to answer in the work of this project was "What is a transfer student?" As students leverage online offerings from multiple institutions and high school students enroll in community colleges for dual enrollment credits, sometimes even earning their associate degrees before starting as "first time in college," the focus on vertical transfer is at the very least complicated by the movement of modern students. Understanding how students move between institutions is important to better understand how technology needs to be implemented to serve students where they are.

**In September 2026, the Laramie County Community College Board of Trustees unanimously adopted a resolution changing the name of Laramie County Community College to Wyoming State College. The change takes effect on July 1, 2027.*

Technology-Enabled Advising and Degree Planning

Advising is a critical component of transfer success because, as mentioned, students must often interpret complex information and make consequential decisions across multiple institutions. Various technology platforms can support advising by providing students and advisors with information related to:

- Completed coursework
- Course equivalencies
- Credit applicability
- Transfer pathways
- Degree program requirements
- Progress toward completion

However, providing more information via technology platforms does not necessarily make advising easier or more straightforward. The project participants discussed needing to often navigate multiple institutional platforms, verify information manually, and rely on historical, institutional knowledge that may not be well-documented in policy.

For example, in WICHE's culminating focus group, a participant in Arizona commented:

"Every time I talk to my articulation team, it's a nightmarish process. And our students and our advisors and faculty have to navigate that. We do a lot with our instructional councils and chairs on an annual basis to talk about 'other duties as assigned' in the transfer space. The Transfer and articulation services team meet with the colleges and provide a lot of professional development and support because it is very nuanced at the best of times. There's a lot that could be done in this space to create standard operating procedures, there's a lot of knowledge that lives in people's heads."

When optimized, technology should both help make information more accessible while also helping campuses institutionalize knowledge so that the transfer experience is not reliant on individual staff members who may or may not be able to navigate complex systems. MDRC and the Community College Research Center have studied how technology can support advising efforts, noting that implementing technology solutions in advising is an iterative process that takes time⁵. Additionally, successful technology implementation should not be defined solely on use (e.g., measuring number of student logins to a particular platform). Rather, institutions must grapple with whether the information generated by technology influences student decision-making, increases the accuracy of transfer credit evaluation, reduces duplicative work by staff, and, ultimately, improves students' progress towards degree completion.

Project Example: Montana University System and Helena College

The Montana University System and Helena College's project focused on the implementation of Degree Works at Helena College. Helena College was selected for this partnership, as they were the only campus within the Montana University System that did not have Degree Works implemented. Helena College serves over 300 transfer students and approximately 400 enrollment students, all with an advising staff of five. The goal was to provide students with ease of access to understand their degree plans and degree requirements and provide advisors with helpful tools when discussing a student's college and career plan. Additionally, full implementation of Degree Works at Helena College would allow the Montana University System to move towards the full implementation of a Transfer Finder tool. Having Degree Works and Transfer Finder would provide advisors with helpful technology to clearly demonstrate a long-term understanding of a student's educational pathway and would empower students to understand their multitude of options for transferring within the system. Although Degree Works can be used at any time, it is most often utilized during advising and registration sessions to determine courses needed for completion. It also supports returning learners in the recognition of currently completed courses and options for completion in various degree programs. Although the project was delayed due to the implementation of another large technology project, the timing of the project provided a significant and unanticipated opportunity: Helena College was positioned to pilot the use of automatic degree awarding through DegreeWorks, a capability that was not part of the original scope of work but represents a meaningful benefit to students.

Data-Sharing and Institutional Coordination

Transfer is inherently a cross-institutional process. However, the technologies supporting students, including transfer students, are institution-specific. Sending and receiving institutions, even those with well-established articulation agreements, may use different student information systems, degree audit platforms, data structures, technology vendors, and administrative processes. This creates a fundamental challenge for students. That is, their transfer process crosses institutional boundaries, yet the systems designed to facilitate that process often do not.

This challenge is especially apparent for institutions trying to fully understand their transfer students' experiences. For example, consider a case of vertical transfer in which a student transfers from a community college to a four-year institution. The sending institution will know what courses a student completed prior to transfer. The receiving institution will know how those courses were ultimately applied and how the student progressed towards completion. However, without a mechanism to connect these data, neither institution has a complete picture of that student's transfer experience.

Project participants discussed the challenges related to data sharing and coordinating across institutions. When data is shared across institutions, often because of a state mandate, issues with it being usable or actionable persist.

A participant in Arizona described this challenge in WICHE's culminating focus group:

"In Arizona, we have legislation that says that AZ transfer is our transfer portal. When that

was first created, all the agreements behind it were that we would have deidentified information allowed back out. We put in all this identified information and then what we get back is deidentified. So, we can get these canned reports, but they don't help us understand our agreements."

Effective data sharing and system interoperability is not simply a technology problem, although technology is certainly central to the issue; it also speaks to issues of governance and policy. Institutions need shared definitions, data structures, clear processes, and shared expectations. Put simply, technology cannot solve a problem in which multiple institutions collect, categorize, and store information differently.

Project Example: Northern State University and Southeast Technical College

Northern State University (NSU) and Southeast Technical College (STC) entered a co-admission and co-enrollment partnership that enables students to be jointly admitted and enrolled at STC and NSU. They represent the first such partnership between a Board of Technical Education institution and a South Dakota Board of Regents institution. This project was used to invest in Transferology, TDX, and TDX iPass to improve course-to-course transfer and to seamlessly and securely share student information. This project required a great deal of data sharing and management. As a result of the technology, student information for STC students who are co-admitted and co-enrolled to NSU will be shared daily via a TDX iPass system between two different student information systems at two different institutions.

The biggest challenges to this project were secure data transfer and labor investment.

The chief information officers and technology services teams at each institution had the responsibility of moving student data securely from STC to NSU and from NSU back to STC to create access for NSU admissions, financial aid, and registrar while the student is still enrolled primarily at STC. Even with fully implemented solutions, there were challenges around who owns the technology, who manages it, and who maintains it. The transfer flow between the two institutions is low, but the project leads expressed excitement about the potential of this pilot between the two institutions. The next steps to test the system include promoting and increasing visibility for the programs that students can co-enroll in and deepening curricular structures to improve student retention in those programs.

Conclusion

Over the course of the Transfer Partnerships initiative, the community of practice and the individual projects illustrated the ways in which technology both produce and reduce barriers within the transfer process. Importantly, technology investments alone cannot solve the underlying complexities of transfer. Below, four implications of this work are outlined for institutions seeking to use technology to support transfer student success.

One lesson emerging from this work is that a comprehensive understanding of the challenges and opportunities embedded within the transfer process, including those shaped by state and local contexts, can help institutions identify technology solutions that are responsive to their needs. Rather than adding additional technology platforms into an already complex process, technology can be most effective when it is responsive to the specific barriers facing students and staff and building on processes that are already working well.

Second, the initiative highlighted the importance of interoperability and shared data structures across institutional boundaries. Because transfer inherently involves movement between institutions, technology systems are often most effective when they can communicate across institutions where possible. Project participants also noted that achieving this requires more than technical operability; it often depends on shared definitions, clear data governance, and common understanding about how information is collected, maintained, and used.

Third, the initiative highlighted the importance of measuring the impact of technology solutions and implementation rather than technology adoption alone. Although usage metrics may be helpful for institutional leaders, participants noted that the value of understanding whether

technology contributes to improvements in the transfer process, including the accuracy of credit evaluation, reductions in excess credits, streamlined administrative processes, and more effective advising, remains an important area for further assessment and examination.

Finally, the project reinforced the importance of the human element in the transfer process. Although technology can make information more accessible and reduce administrative burdens, project participants emphasized that students and staff remain central to navigating and supporting the transfer experience. In this context, technology is most valuable when it serves as a tool that supports and enhances, rather than replaces, the human dimensions of transfer.

Acknowledgments

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Bolded individuals acted as project leads and held primary responsibility for communicating across institutions and producing project deliverables to WICHE.

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Endnotes

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About WICHE

The Western Interstate Commission for Higher Education (WICHE) is a regional interstate higher education compact of 15 Western states and the U.S. Pacific Territories and Freely Associated States. Since 1953, WICHE has focused on its mission of expanding educational access and excellence for all residents of the West. By promoting innovation, cooperation, resource sharing, and sound public policy, WICHE strengthens higher education's contributions to the region's social, economic, and civic life.

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