



UNDERSTANDING CREDIT MOBILITY FOR ENGINEERING TRANSFER STUDENTS



The seamless transfer of credits between institutions is a crucial component of effective transfer pathways (Jenkins & Fink, 2015; Monaghan & Attewell, 2015; Wyner et al., 2019). For students to consider transfer a viable option, the ability to move credits from one institution to another is essential. While most transfer students experience some degree of credit loss, there's a lack of comprehensive understanding of the factors contributing to this issue, including both student-related and institutional aspects (Giani, 2019). **By focusing on the factors that influence credit mobility and application, institutions and policymakers could develop more effective strategies to support transfer students and enhance the overall transfer ecosystem.**

This practice brief examines a recent study published in *AERA Open* by Richardson and Knight (2024). The research analyzed transcripts and degree audit reports from both the sending and receiving institutions of 60 engineering students. These participants were part of a National Science Foundation S-STEM grant program, providing students with scholarships, extensive advising, and access to co-curricular activities to enhance their academic success.

The students in this study represent an optimal scenario for credit transfer, as they were given detailed study plans specifically crafted to minimize credit loss between institutions. This approach allows for an examination of credit mobility under near-ideal conditions, providing valuable insights into the transfer process even when students receive significant support and guidance.

Adapted from

Richardson, A. J., & Knight, D. B. (2024). Earned Credit Could be Lost Credit. *AERA Open*, 10. <https://doi.org/10.1177/23328584241289377>

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This brief was developed with support from the National Science Foundation under Grant No. DUE-2138188: Collaborative Research: A Research Hub for Understanding Inter- and intra-institutional partnerships that systematically support low-income engineering students. Any opinions, findings, interpretations, conclusions or recommendations expressed in this material are those of its authors and do not represent the views of the National Science Foundation.

Where did all the credit go?

Magnitude of Credit Loss

This study revealed that the maximum loss exceeds the typical credit requirements for an associate degree, representing multiple years of academic work and associated tuition costs.

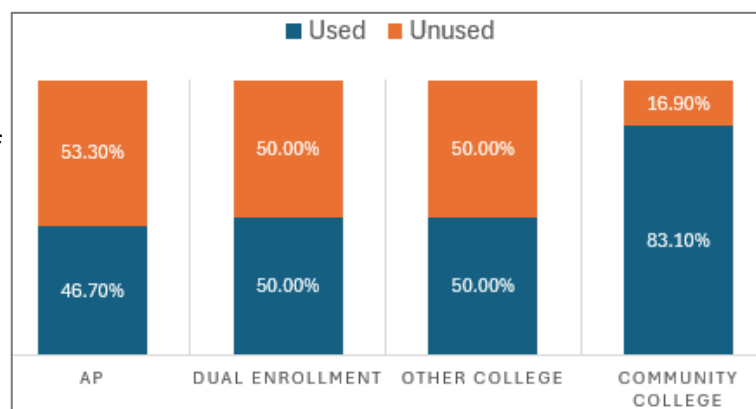


Sources of Credits Lost

Credits were lost throughout the entire span of a transfer student's journey. Whenever there was an opportunity to earn credit, there was also the risk of losing that credit.

Pre-Transfer Credit

The vertical bar chart below shows how pre-transfer credit was used or unused. Much of the credits earned prior to community college were lost.

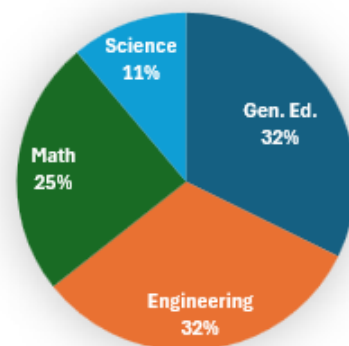


Associate Degree to Transfer

The next source of credit loss is at the point of transfer when students' transcripts are evaluated. Much of the credit loss (74.5%) in this stage is attributed to equivalent courses not having equivalent credit values. For example, Calculus III at the community college was 4 credits but at the receiving institution was 3 credits so each student that took that course lost 1 credit.

Accepted Credit to Applied Credit

The final phase in the transfer process occurs when credits accepted by the university are evaluated for application towards specific degree requirements. This situation often arises when courses have university equivalents but are not mandatory for a particular degree. The pie chart on the right shows the breakdown of subjects where credit was lost in this stage.



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High Schools

High schools offering courses for college credit should set expectations about the usability of these courses. Additionally, high schools should inform students of institutional requirements and how this credit could or could not be used.



PRACTICAL CONSIDERATIONS

- Who should be taking these AP/Dual Enrollment credits?
- Will these students be able to use these credits toward their post-secondary degree?

Community College

Look at degree requirements and course equivalencies to reduce the number of single credits lost.



PRACTICAL CONSIDERATIONS

- Are all AS degree requirements necessary and used post-transfer?
- Can equivalent courses have equivalent credit hours?

Universities

Look at transfer students holistically as opposed to being a collection of credits. By examining institutional credit transfer policies, receiving institutions could provide much needed flexibility for transfer students.



PRACTICAL CONSIDERATIONS

- Are there areas where single credit or courses lost from acceptance to application could be used?
- Are transfer policies flexible enough to look at students' entire record instead of a collection of courses?

Policy Makers

Much of the statewide transfer policies focus on general education credits; however, in STEM degrees the number of general education courses required are minimal.



PRACTICAL CONSIDERATIONS

- Do these policies consider major-specific coursework?
- Can statewide transfer agents create spaces to facilitate discussion between institutions?

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Acknowledgments

This article was based on work supported by the National Science Foundation, Directorate for Education and Human Resources, Division of Undergraduate Education under Grant No. DUE 1644138. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

About the ROPES Hub

The Research on Organizational Partnerships in Education in STEM (ROPES) Hub advances understanding of organizational partnerships that support academic pathways for domestic low-income engineering and computing students through a broad community of practice and a multi-faceted research agenda.

About Authors



Amy Jo Richardson is a research scientist in the Engineering Education Department at Virginia Tech. Her research focuses on the transfer process from community college to university and the interinstitutional partnerships necessary to facilitate it.



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