

College of Agriculture Students' Transfer Experiences Compared to the Experiences of Their University Peers

Jennifer M. Bundy¹, Michael S. Retallick², Elizabeth A. Foreman³, and Kelsey Powell⁴

Abstract

Transfer students from the College of Agriculture (COA) at Iowa State University graduate at a higher rate than their university peers (non-COA). Therefore, the purpose of this study was to determine if differences exist between COA and non-COA transfer students in their pre- and post-transfer experiences. A survey instrument was developed, and the fall 2019 transfer cohort was polled (n = 1048). A useable response rate of 45.9% (n = 481) was achieved which contained 104 COA participants. Responses from a random sample of 104 non-COA respondents served as the comparison group. Survey results found statistically significant differences (p < 0.05) between the groups in the manner in which transfer student capital was obtained. COA students tended to use advisors and admissions counselors prior to transfer more than their non-COA peers. However, pre- and post-transfer resources were under-used by both groups. On average, 66.0% of all respondents reported that they planned to transfer to a four-year institution prior to enrollment at their previous institution, but less than 50.0% of respondents used a transfer plan or course equivalency guide to aid in their course planning. Additionally, an average of 76.5% of transfers across both groups reported being aware of post-transfer tutoring services but did not utilize this resources in their first semester. Significant differences (p < 0.05) were observed in the perceived usefulness of post-transfer tutor resources between the two groups. Additional research is needed to determine if observed differences between COA and non-COA students explain variance associated with persistence and completion of a baccalaureate degree.

Key Words: transfer students; transfer resources; transfer student capital; student success

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Introduction

The National Center for Education Statistics (NCES) predicts that by the fall semester of 2029, undergraduate enrollment at postsecondary institutions in the United States will increase from 19.6 million in 2018 to 20.1 million (NCES, 2019). An average of 39.3% of those students will enroll at two-year institutions (NCES, 2019). Additionally, Shapiro et al. (2018) estimated 38.0% of students who start at a public, two-year institution will transfer to a four-year college or university. In the spring of 2021, vertical transfers from a two-year institution to a four-year institution rose 1.5% over vertical transfers in

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the spring of 2020 (Huie et al., 2021). These statistics position public, two-year institutions as an important educational pathway for many American students. Ridge (2020) found that independent, baccalaureate-seeking transfer students acquired an average of \$5,063 less in student loan debt than independent, baccalaureate-seeking direct-from-high school students. However, despite greater affordability of transfer pathways, Shapiro et al. (2017) reported that only 42.0% of American students who transfer from a two-year to a four-year institution complete a bachelor's degree program within six years of beginning their post-secondary education. This signals the need for four-year institutions to minimize barriers while developing programs and best practices that support transfer student success.

Hills (1965) first described *transfer shock* as a drastic decrease in academic performance in the semester(s) following transfer to a four-year university. Since that time, many scholars have studied transfer shock and the barriers associated with the phenomenon. Laanan (2001) initially broke down transfer barriers into three main areas: (1) psychological barriers, (2) academic barriers, and (3) environmental barriers. Academic barriers include curricular gaps between two-year and four-year institutions, discrepancies in pre-requisite completion, and variations in academic preparedness across two-year programs (Doyle, 2009; Goldrick-Rab, 2006; Kopko & Crosta, 2016; Porchea, 2010; Seine, 2014; Townsend & Wilson, 2009). Psychological barriers include finding the confidence to perform well in classes, difficulty achieving a work-school-life balance, and pressure to socially integrate into the four-year institution (Goldrick-Rab et al., 2006; Porchea, 2010; Schwehm, 2017; Townsend & Wilson, 2009). Environmental barriers include larger class sizes, lack of interactions with professors, and adjusting to a new city and campus at the transfer institution (Laanan, 2001, Tobolowsky & Cox 2012). Further, evidence shows that demographic factors such as gender, race, and socioeconomic status play a large role in determining the combination of barriers that may exist for a given student. (Goldrick-Rab et al., 2019; Jenkins & Fink, 2016; Perez-Felkner et al., 2019; Swing, 2020, Umbach et al., 2019).

In addition to demographic factors, experiences of the student also contribute to transfer success or failure. Laanan et al. (2010), coined the phrase *Transfer Student Capital (TSC)* which refers to the knowledge that a transfer student has regarding transfer articulation, grade requirements, credit transfer, and pre-requisites of common courses. They argued that the more TSC a student possesses prior to transferring, the more likely the student is to transfer and adjust to the new institution successfully. LaSota & Zumeta (2016) and Swing (2020) also noted a link between successful transfer and transfer preparation through the accumulation of TSC. Community college students gain TSC from peers, family members, and through interactions with community college advisers (Maliszewski & Hayes, 2020). One surprising finding from the 2020 Maliszewski and Hayes study was that one-third of TSC was gained through high school resources. This suggests that transfer preparation is beginning far earlier than initially thought.

Ivins et al. (2017) also identified a linkage between post-transfer experiences and transfer success. The researchers noted that post-transfer experiences play a role in overcoming transfer shock. Key post-transfer factors included faculty collaboration, level of engagement with degree program, and campus support at the new institution (Ivins et al., 2017). Researchers (Laanan, 2001; Laanan et al., 2010; Lopez & Jones, 2017; Nuñez & Yoshimi, 2017; Townsend & Wilson, 2006; Tobolowsky & Cox, 2012; Wetzell & Debure, 2018; Zilvinskis & Dumford, 2018) have highlighted the extreme importance of faculty and staff interactions to the success of incoming transfer students. Additional post-transfer experiences that affect social and academic integration include engagement in student organizations (Laanan, 2007; Schwehm, 2017; Townsend & Wilson, 2009), academic and financial support at the receiving institution (Jain et al. 2011; Laanan et al., 2010), and satisfaction with academic advising (Allen et al., 2014; Laanan et al. 2010; Townsend & Wilson, 2006). Collectively, individual characteristics such as demographics, pre-transfer knowledge, and post-transfer experiences, accounted for 96.0% of the variance in first-semester grade point average (GPA) after transfer (Umbach et al., 2019).

Across all public, four-year universities within our state, 49.7% of transfer students graduate with a bachelor’s degree within six years of starting at a community college (Shapiro et al., 2018, Appendix C). According to institutional data from 2018, Iowa State University (ISU, 2019) achieved a transfer student graduation rate of 65.9%. Interestingly, the transfer completion rate within the College of Agriculture (COA) was 76.3%, whereas other colleges within ISU averaged $63.8 \pm 5.8\%$ transfer completion during the same time frame. Therefore, programs and practices that exist within COA are improving the transfer student experience, which has resulted in improved transfer completion rates that are 34.3% above the national average of 42.0% (Shapiro et al., 2018, Appendix C).

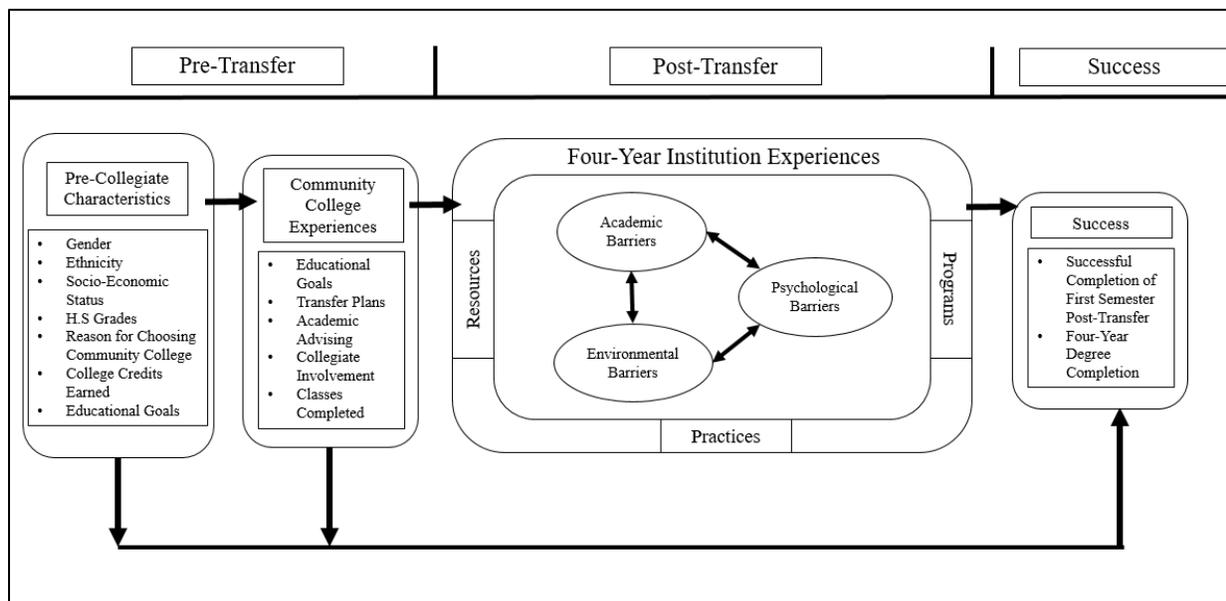
Understanding the pre- and post-transfer experiences of COA students will shed light on possible sources of TSC at ISU and within the COA. This understanding will open the door for improved services that aim to minimize barriers and smooth transfer pathways. A comparison of COA students’ experiences to that of their university peers is important for identifying unintended hurdles, offering college-level programming, providing specialized support, and developing services to minimize transfer shock. This study aims to quantify and compare the reported experiences of students from the COA to the experiences of their university peers.

Conceptual Framework

The Pre- and Post-Transfer Characteristics and Experiences Framework Leading to Student Success (Figure 1) was developed to guide this study. Foreman and Retallick’s (2012) Collegiate Leadership Development model provided the initial structure and framework for the model and a comprehensive review of literature related to transfer and student success was used to fully develop the framework.

Figure 1

Pre- and Post-Transfer Characteristics and Experiences Framework Leading to Student Success



The framework suggests the combination of pre-transfer and post-transfer experiences and characteristics lead to student success including the ultimate success – graduation. Pre-transfer experiences include a variety of student characteristics including demographic, socio-economic, and previous academic preparation (Ivins et al., 2017; Maliszewski & Hayes, 2020). Additionally, pre-transfer acquisition of TSC through community college experiences like academic advising and support, transfer

planning, and availability of pre-transfer resources has been shown to play a role in successful transfer (Laanan, 2010; LaSota & Zumeta, 2016; Maliszewski & Hayes, 2020; Swing, 2020). The post-transfer component includes programming, resources, and best practices while minimizing academic, psychological, and environmental barriers (Goldrick-Rab, 2006; Laanan, 2001; Porchea, 2010; Schwehm, 2017; Tobolowsky & Cox 2012; Townsend & Wilson, 2009). Graduation is the end result and the primary measure of success, but success can be evaluated at a more granular level, including first-term completion and persistence to second term, adequate progress through degree program, and on-time graduation rates.

Purpose and Research Questions

The purpose of our study was to compare pre- and post-transfer experiences of COA transfer students to their transfer peers across ISU to identify potential factors that have led to greater success in the form of higher completion rates among COA students. The following research questions guided the study:

1. Do differences exist between COA and non-COA transfers in the acquisition of TSC through use of pre-transfer resources, perception of helpfulness of these pre-transfer resources, and preparation to transfer?
2. Do differences exist between COA and non-COA in psychological factors related to transfer shock (i.e. academic confidence, work/life/school balance)?
3. Do differences exist between COA and non-COA in academic factors related to transfer shock (i.e. use of post-transfer academic resources to overcome curricular gaps, and the perception of helpfulness of the pre-transfer resources that were used)?
4. Do differences exist between COA and non-COA in environmental factors related to transfer shock (i.e. interactions with faculty and peers, advisement experiences)?

Methods

This study was conducted as part of a larger research project designed to investigate the transfer process at ISU. Second-semester undergraduate transfer students from both from 2- and 4-year institutions were surveyed using a researcher-developed survey instrument. Inclusion in the study was not restricted by previous credits earned or previous degrees earned.

To develop the survey, six focus groups consisting of first-semester transfer students were conducted. Focus group feedback revealed themes associated with the transfer process (Siberski & Bundy, 2019). Using these themes and previously documented transfer student barriers (Laanan 2001; Laanan 2007), we developed a survey instrument that was divided into three sections: planning to transfer, experiences at previous institution, and experiences that occurred shortly after transfer.

Content and face validity were established by distributing the survey to administrators, faculty members, academic advisers, and student service specialists who were familiar with transfer programs and policies. These individuals were asked to provide feedback on question content as well as the structure, length, and composition of the instrument. Based on their feedback, changes were made to reduce the number of questions and clarify content within the survey. IRB approval was received.

Qualtrics (Qualtrics Labs, Inc., Provo, UT) was used to conduct a pilot study to test the reliability of the survey instrument. The survey was distributed to current transfer students within COA ($N=88$) via email. Forty-four students responded (50.0% response rate). Following pilot data collection, an exploratory factor analyses was completed to identify latent factors and facilitate item reduction. Based on the results of the pilot study, the instrument was further refined.

Qualtrics (Qualtrics Labs, Inc., Provo, UT) was used to conduct the survey. The skip logic function of Qualtrics was used to skip irrelevant questions based on a student's previous responses. Thus, the number of question that each student answered varied. Student Registrar data were combined with

survey results to address individual research questions in this study. The survey instrument was sent via email, and three email reminders were sent to non-respondents. Once the survey closed, data from respondents were matched to student records via email addresses. The data were then de-identified to ensure confidentiality.

The student experiences and all data collection for this study occurred prior to the COVID-19 pandemic. The survey instrument was distributed to all 1,048 students (COA: $N = 262$, non-COA: $N = 786$) from the fall 2019 transfer cohort. A total of 552 students responded (52.7% response rate) by starting the survey and 481 completed a significant enough portion of the instrument to be included in data analysis, resulting in a usable response rate of 45.9%. The usable response rate of those students who responded from COA was 39.7% ($n=104$) and from non-COA 45.7% ($n=377$). A summary of survey distribution and response is provided in Table 1.

Table 1

Summary of survey distribution and response rates.

Measure	Total Population	COA Respondents	Non-COA Respondents
Number Distributed (n)	1048	262	786
Surveys Taken (n)	552	122	430
Response Rate (%)	53	47	55
Completed 11% or More (n)	481	104	377
Useable Response Rate (%)	45.9	39.7	45.7

To address non-response error, demographic variables of respondents and non-respondents were compared using Registrar data. Differences were found related to gender ($X^2 = 54.72, p < .000$), incoming GPA ($t = -6.02, p < .000$), and first semester GPA ($t = -6.026, p < .000$), where respondents were more likely to be female and have higher incoming and first semester GPAs. Therefore, caution should be made when generalizing beyond those students who responded.

Because the sizes of our comparison groups (i.e., COA students and non-COA students) were unequal, we used SPSS (Version 25) to draw a random sample from the 377 non-COA respondents to make two equal groups of 104 for analysis. Descriptive statistics including measures of central tendency were used to answer the research questions as were inferential statistics including t-tests and Chi-square to determine differences.

Findings

Research question one focused on acquisition of transfer student capital through use pre-transfer resources used, their perceived usefulness, and students' plan to transfer. Students were asked to identify all of the pre-transfer resources they used from a list of seven pre-transfer resources and one "other" category. Then, respondents were asked to rank the usefulness of the resources that they had used ($1 = \text{most useful}$, $2 = \text{somewhat useful}$, $3 = \text{neutral}$, $4 = \text{not useful}$, and $5 = \text{least useful}$). The seven resources listed were (1) Academic advisor, (2) Admissions counselor, (3) Course equivalency guide, (4) Transfer plan, (5) TRANSIT, (6) Admissions Partnership Program (APP) and, (7) Transfer scholarships and the explanation of each follows. Students that used an academic advisor would have met with or been in contact with an academic advisor from the department of their intended major. Students who used an admissions counselor would have met with or been in contact with a representative from the admissions

office. admissions counselors do not represent an individual major. Course equivalency guides provide a list of courses that are approved transfer courses per a transfer articulation agreement. Transfer plans are academic plans that help the student choose courses at a community college that will meet degree requirements at ISU. Transfer plans are developed by an academic advisor and apply specifically to a single community college and major. Both course equivalency guides and transfer plans are made available on the ISU transfer webpage. TRANSIT is an online platform available through the transfer webpage that gives students the opportunity to visualize how their previously completed credits will transfer into their chosen course of study. The APP aims to smooth the transition of in-state community college students to ISU by offering a variety of exclusive benefits for students intending to transfer in the future. Students enrolled in the APP have access prior to transferring to advisors within their major, assistance with degree planning, and exposure to events and important campus deadlines. Transfer scholarships are scholarships that are only available for transfer students and may be offered through the university, college, or department of the student's major. Lastly, the "other" section included previous academic advisor, resources at the previous institution, family members, and friends that are not provided in the previous list.

Differences in pre-transfer resource usage between COA and non-COA are shown in Table 2. Of the seven transfer resources provided, three were statistically different. COA students were more likely to contact a university academic advisor and/or an admissions counselor ($p < 0.05$), while non-COA students were more likely to use the APP ($p < 0.05$). The remaining resources where no differences were found were course equivalency guides, transfer plans, TRANSIT, and availability of transfer scholarships.

When asked to rank the usefulness of these resources, COA students ranked academic adviser, transfer plans, and course equivalency guides as the most useful resources. Non-COA students ranked admissions counselors, academic advisors, and TRANSIT as the most useful resources. Items listed in the "other" category (previous academic advisor, resources at the previous institution, family members, and friends) were ranked as very useful but only three students from each category reported using these resources. Perceived usefulness of pre-transfer resources and the comparison between COA and Non-COA respondents is available in Table 3.

Table 2

Differences in the use of transfer resources between COA and non-COA students, (N = 208)

Transfer Resource	COA (<i>n</i> =104)		Non-COA (<i>n</i> =104)		χ^2	<i>p</i>
	<i>n</i>	% of Respondents	<i>n</i>	% of Respondents		
Academic Advisor	68	65.38	51	49.04	5.86	0.05*
Course Equivalency Guide	48	46.15	36	34.62	3.79	0.15
Transfer Plan	47	45.19	46	44.23	2.24	0.33
Admissions Counselor	24	23.08	9	8.65	9.07	0.01*
TRANSIT	23	22.11	26	25.00	2.76	0.25
Other	18	17.31	22	21.15	3.07	0.22
Admission Partnership Program	8	7.69	16	15.38	5.92	0.05*
Transfer Scholarships	4	3.85	3	2.88	2.17	0.33

* $p \leq 0.05$

Table 3

Differences in the perceived usefulness of transfer resources between COA and non-COA students, (N = 208)

Transfer Resource	COA (n=104)		Non-COA (n=104)	
	n	Ranking	n	Ranking
Academic Advisor	44	1.52	38	2.00
Transfer Plan	38	2.29	35	2.37
Course Equivalency Guide	38	2.32	33	2.27
Availability of Transfer Scholarships	22	2.77	7	3.29
TRANSIT	21	3.05	23	2.17
Admissions Partnership Program	7	3.14	15	2.73
Admissions Counselor	10	3.30	16	1.94
Other	3	1.33	3	1.67

Note. Respondents were given options on a five-point Likert-type ordinal scale to rank the usefulness of each resource. In this survey, 1 = most useful, 2 = somewhat useful, 3 = neutral, 4 = not useful, and 5 = least useful. Average rank presented here.

As shown in Table 4, nearly identical numbers of COA (67.0%) and non-COA students (65.0%) reported that they planned to transfer to a four-year institution prior to attending their previous institution ($p > 0.05$). Although similar proportions of COA and Non-COA students planned to transfer, Tables 2 and 3 showed that students from these two comparison groups took slightly different approaches while attaining TSC.

Table 4

Differences in students' plan to transfer when entering their previous institution (N=208)

Plan to Transfer	COA (n=104)		non-COA (n=104)		χ^2	p
	n	% of Respondents	n	% of Respondents		
Yes	70	67.3	68	65.4	2.43	0.29
No	24	23.1	19	18.3		
No Response	10	9.6	17	16.4		

The second research question addressed psychological factors such as academic confidence as they entered the university and the ability to achieve a work-life-school balance. To determine if psychological differences exist between COA and Non-COA participants, students were asked to respond to seven academic confidence statements regarding the extent to which they agreed with them. Respondents were given options on a five-point Likert-type scale, where 1 = strongly disagree and 5 = strongly agree. Results of this question series are shown in Table 5. In general, COA students and non-COA students agreed that they would be successful, could complete the coursework, and felt challenged. On average, students from both comparison groups felt that faculty were helpful and they felt comfortable asking questions. On average, students were neutral about their abilities to balance school, work, and social commitments but did not feel that they struggled on exams. There were no differences between COA and non-COA students ($p > 0.05$), although COA students tended to feel slightly less comfortable when asking questions ($p = 0.09$).

Table 5

Differences in level of self-perceived academic confidence between COA and Non-COA transfer students, (N = 178)

Academic Confidence	COA (<i>n</i> = 91)		Non-COA (<i>n</i> = 87)		<i>t</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Feelings of Success	4.44	0.70	4.32	0.77	1.06	0.29
Coursework Completion	4.36	0.79	4.26	0.81	0.79	0.43
Challenged Academically	4.35	0.69	4.39	0.69	-0.38	0.71
Helpful Faculty	4.32	0.80	4.36	0.76	-0.32	0.75
Comfort Asking Questions	3.41	1.20	3.71	1.26	-1.66	0.09
Work/School/Life Balance	3.09	1.33	3.39	1.35	-1.51	0.13
Did Poorly on Exams	2.91	1.35	2.76	1.28	0.78	0.44

* $p \leq .05$

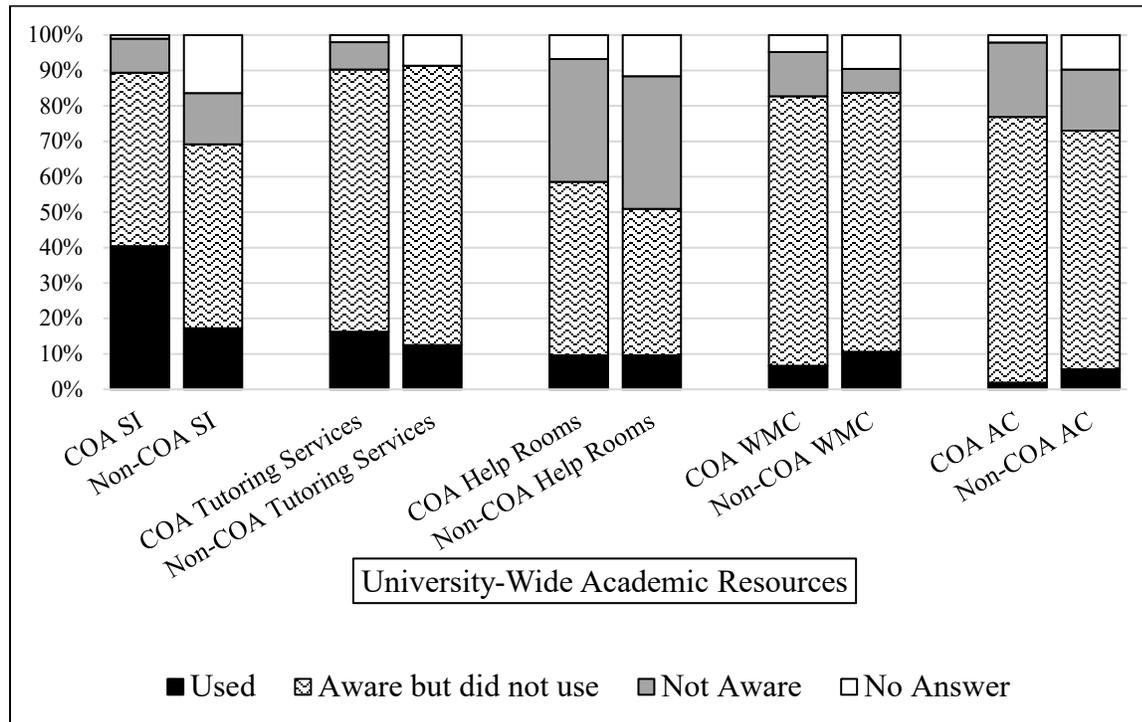
Note. Respondents were given options on a five-point Likert-type ordinal scale to rank the degree with which they agree or disagree with a given statement. In this survey, 1 = *strongly disagree*, 2 = *somewhat disagree*, 3 = *neither agree nor disagree*, 4 = *somewhat agree*, and 5 = *strongly agree*.

Research question 3 focused on identification of differences between COA and Non-COA in academic factors that may affect transfer shock including the rate at which post-transfer academic resources were utilized to aid in overcoming preparedness issues and curricular gaps. To address this, students were asked if they used, were aware of but did not use, or if they were unaware of certain academic resources. Academic resources are presented in two categories: (1) resources that are available across the whole university and (2) resources that may be offered by a department, learning community, or program. University-wide resources included Supplemental Instruction (SI), tutoring programs, help rooms, the Writing and Media Center (WMC), and Academic Coaching (AC). Resources such as SI, tutoring services, and AC are services that are coordinated through the ISU Academic Success Center. The Writing and Media Center is a peer-tutoring center that offers assistance with written, visual, and oral communication to students from all disciplines. Help rooms are physical locations for individualized peer-tutoring that are available to all students enrolled in a variety of math, chemistry, and physics courses. Departmental, learning community, or program-specific resources included instructor or teaching assistant office hours, peer study groups coordinated through learning communities, tutoring through student clubs, and tutoring through an academic program.

Use and awareness of university-wide academic resources are shown in Figure 2. No statistically significant differences between COA and non-COA were found. SI was the most-used university-wide resource used by this transfer cohort. Just over 40.0% of COA students and 17.0% of non-COA students reported using this resource. However, large proportions of both groups reported being aware of other university-wide academic resources, but not using them. Approximately 74.0% of COA students and close to 79.0% of non-COA students reported being aware of tutoring services offered through the ISU Academic Success Center but did not use those services. Likewise, 76.0% of COA, and 73.0% of non-COA students knew about the services that the Writing and Media Center offered but they did not take advantage of those resources. Almost 35.0% of COA students and 38.0% of non-COA reported they were unaware of the help room resources on campus.

Figure 2

Differences in the use and awareness of university-wide academic resources between COA and non-COA students (N=208)

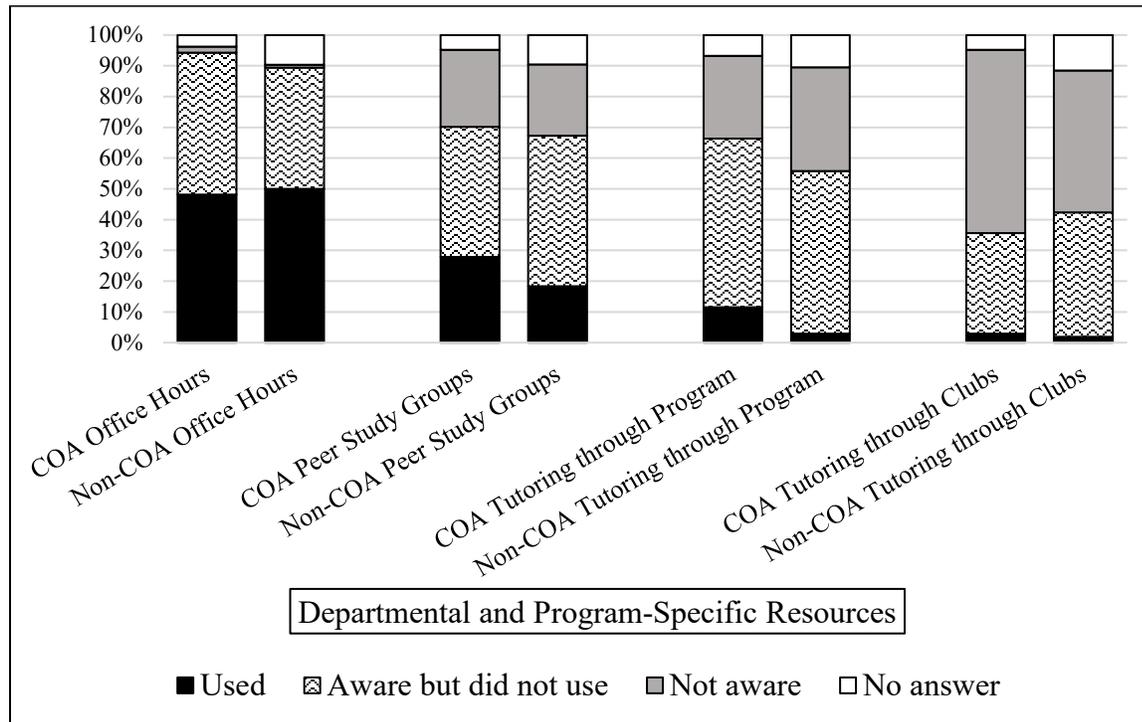


Note. SI = Supplemental Instruction, WMC = Writing and Media Center, and AC = Academic Coaching.

Use and awareness of departmental, learning community, or program-specific academic resources are shown in Figure 3. No statistically significant differences between COA and non-COA were found. Instructor or teaching assistant office hours were the most used departmental resources with 48% of COA and 50% of non-COA students reporting usage. Peer study groups, tutoring through an academic program, and tutoring through clubs were widely unused, but almost 60% of COA students and 46% of non-COA students reported being unaware that tutoring through student clubs was an available resource.

Figure 3

Differences in the use and awareness of departmental, learning community, and program-specific academic resources between COA and Non-COA students (N=208)



Participants who reported using an academic resource, were asked to then report their perceived usefulness of the resource. Respondents were given options on a five-point Likert-type scale, where 1 = strongly disagree that the resource was helpful and 5 = strongly agree that the resource was helpful. Table 6 shows the differences in perceived usefulness of academic resources between COA and non-COA students. On average, COA students agreed that all resources were helpful with the exception of tutoring through student clubs. COA students reported that academic coaching, the Writing and Media Center, and tutoring services through the Academic Success Center were the most useful. non-COA students responded that all of the resources listed were helpful and ranked programmatic tutoring, help rooms, and instructor / TA office hours as the most useful. Significant differences existed between COA and non-COA students in the ranking of program-specific tutoring, instructor / TA office hours, and help rooms. In all cases, non-COA students ranked these resources as significantly more useful ($p < 0.05$) than COA students.

Table 6

Differences in perceived usefulness of academic resources between COA and non-COA transfer students, (N = 208)

Academic Resources	COA (n=104)		Non-COA (n=104)		t	p
	M	SD	M	SD		
Academic Coaching	4.50	0.71	3.83	0.98	1.04	0.39
Writing and Media Center	4.29	0.76	4.18	1.08	0.24	0.81

Table 6

Differences in perceived usefulness of academic resources between COA and non-COA transfer students, (N = 208)

Tutoring Services	4.24	0.83	4.15	0.90	0.25	0.80
Tutoring through Program	4.08	1.31	5.00	0.00	-2.42	0.03*
Peer Study Groups	3.90	0.90	4.00	0.88	-0.39	0.69
Instructor/TA Office Hours	3.86	0.90	4.29	0.75	-2.60	0.01*
Supplemental Instruction	3.67	1.07	3.83	1.09	-5.42	0.59
Other	3.50	0.71	4.00	1.00	-0.66	0.56
Help Rooms	3.40	0.97	4.40	0.69	-2.65	0.02*
Tutoring through Clubs	2.67	0.58	3.50	0.71	-1.39	0.31

* $p \leq .05$

Note. Respondents were given options on a five-point Likert-type ordinal scale to rank the degree with which they agree or disagree with a given statement. In this survey, 1 = *strongly disagree*, 2 = *somewhat disagree*, 3 = *neither agree nor disagree*, 4 = *somewhat agree*, and 5 = *strongly agree*.

Research question 4 addressed differences between COA and non-COA students in environmental factors such as advisement experiences and interactions with faculty and peers. Survey participants were asked to respond to a series of statements regarding their advisor’s transfer knowledge and level of engagement with the student. Respondents were given options on a five-point Likert-type scale, where 1 = *strongly disagree* and 5 = *strongly agree*. Results from the question block are provided in Table 7. Additionally, respondents were asked to rank their satisfaction with peer and instructor interactions. Results from this question block are given in Table 8. There were no statistically significant differences between COA and Non-COA respondents for all questions ($p > 0.05$) and the mean responses were all somewhat or strongly agree. It appears that respondents within and outside of the COA have had positive post-transfer advising experiences and were satisfied with instructor and peer interactions in their first semester at the university.

Table 7

Differences in academic advisor experiences between COA and non-COA students, (N = 208)

	COA (n=92)		Non-COA (n=85)		t	p
	M	SD	M	SD		
Academic Advisor Experience						
Knowledge of Degree Requirements	4.67	0.73	4.68	0.68	-0.08	0.94
Responds to Concerns in a Timely Manner	4.53	0.95	4.64	0.71	-0.82	0.41
Knowledgeable about Applying Transfer Credits to my Degree	4.47	0.99	4.46	0.91	0.06	0.95
Knowledgeable about Transfer Process	4.42	0.96	4.45	0.93	-0.16	0.87
Knowledgeable about Career Options	4.41	0.92	4.41	0.81	0.01	0.99
Knowledgeable about Transfer Resources	4.18	1.01	4.21	1.11	-0.16	0.87
Served as a Mentor	4.04	1.07	3.79	1.08	1.58	0.11

* $p \leq .05$

Note. Respondents were given options on a five-point Likert-type ordinal scale to rank the degree with which they agree or disagree with a given statement. In this survey, 1 = *strongly disagree*, 2 = *somewhat disagree*, 3 = *neither agree nor disagree*, 4 = *somewhat agree*, and 5 = *strongly agree*.

Table 8

Differences in the instructor and peer interactions of COA and Non-COA transfer students, (N = 208)

Interactions with Instructors and Peers	COA (n=93)		Non-COA (n=87)		t	p
	M	SD	M	SD		
Availability of instructors in my major	4.25	.82	4.14	.92	.84	.40
Interactions with instructors in my major	4.16	.99	4.26	.91	-.73	.47
Interactions with peers	4.15	1.04	3.99	1.09	1.02	.39
Course Availability	4.00	1.03	3.99	.93	.78	.94
Housing Availability	3.91	1.09	3.84	1.04	.46	.65
Availability of instructors outside of my major	3.72	.99	3.85	.89	-.94	.35
Interactions with instructors outside of my major	3.62	1.19	3.90	1.07	-1.62	.11

* $p \leq .05$

Note. Respondents were given options on a five-point Likert-type ordinal scale to rank the extent of their satisfaction. In this survey, 1 = *strongly dissatisfied*, 2 = *somewhat dissatisfied*, 3 = *neither agree nor disagree*, 4 = *somewhat agree*, and 5 = *strongly agree*.

Conclusions, Implications, and Recommendations

Our research study sought to examine the pre- and post-transfer experiences of first-semester transfer students while comparing COA and non-COA students. Survey questions addressed the psychological factors, academic factors, and environmental factors that play a role in transfer shock as outlined by Laanan (2001) and later described in detail by a large number of researchers. Survey questions also addressed the acquisition of TSC described by Laanan (2010). This study showed that there were no differences between COA and Non-COA students in psychological, academic, and environmental factors. This would suggest that these factors are not driving the differences between COA and Non-COA students when it comes to persistence and completion of a degree. However, care should be taken to consider the non-response error that was observed during this study. Respondents, on average, had higher transfer GPA and first semester GPA than non-respondents, which indicates that feedback from the subset of students who struggled the most is lacking. It is possible that psychological, academic, and environmental factors played a role in creating differences between COA and Non-COA among students that suffered from the transfer shock the most.

Differences did exist between COA and Non-COA students in their approach to transfer preparation and acquisition of TSC. Laanan (2010), LaSota and Zumeta (2016), and Swing (2020) noted a link between transfer preparation, acquisition of TSC, successful transfer, and successful adjustment to the new institution. It is possible that these observed differences have contributed to different rates of persistence and completion between the comparison groups. However, additional data analysis is needed to determine if TSC acquisition explains variance in rates of degree completion.

Through this analysis and the supporting literature, it can be concluded that it is vitally important that COA and the university not only provide pre-transfer resources enhance acquisition of TSC, but also ensure that incoming transfer students and advisors know that those resources exist. Of the COA student participants, just over 65.0% report working with an academic advisor at the university prior to transfer while 67.0% report planning to transfer. Of those students who reported working with an advisor, most

reported this resource as the most important tool used in the transfer process and those students who worked with an advisor reported a high degree of satisfaction with the experience. However, only 49.0% of non-COA respondents report working with an advisor prior to transfer while 65.0% planned to transfer prior to attending their previous institution. Additionally, transfer plans and course equivalency guides were utilized by less than 50.0% of the respondents described here. According to our research, academic advisors and pre-transfer resources were under-utilized resources for transfer students. Improvement in these areas could lead to enhancement of the TSC that is acquired by prospective transfer students prior to entering the university.

Many studies have shown that academic barriers contribute to transfer shock experienced by transfer students (Doyle, 2009; Goldrick-Rab, 2006; Kopko & Crosta, 2016; Porchea, 2010; Seine, 2014; Townsend & Wilson, 2009). Despite the fact that academic resources were available at the university, department, and program level, we observed similar trends of resource under-utilization among transfer students. While help rooms and various tutoring resources were highly ranked for usefulness by COA and non-COA students that used them, the majority of survey participants were not aware that these resources existed. Unfortunately, knowledge of academic resources did not result in usage as was observed with academic coaching and the writing media center. The majority of respondents from both comparison groups reported knowing that these resources existed but did not use them. Additional data analysis is needed to provide new students with a quantification of the expected improvement in GPA with use of these resources. This type of information may increase the use of these resources.

While our research did reveal important trends in the transfer student experience and in pre- and post-transfer resource use by transfer students, caution would be advised in the interpretation and application due to some instances where differences were statistically significant and, yet very little practical differences existed. For example, non-COA students were more likely to use the APP; however, only 15% of non-COA and 8% of COA students used the program. Additionally, Non-COA students felt that academic help rooms were significantly more helpful than COA students, but only 10% of students from both groups used this resource.

Further research is needed to learn more about the transfer student experience, specifically those experiences unique to COA students. Additional efforts are needed to gain feedback from the students in lower GPA ranged. Research topics should include identification of college-level barriers to student success, the impact of TSC on first semester satisfaction and success, and the impact of academic resources on classroom effectiveness. It may be necessary to expand the breadth of this topic by studying (quantitatively and qualitatively) future classes for comparative data or conducting interviews with students in order to expand this research. Dialogue with students may reveal deeper and more complex examination of the nuances of the student transfer process. It would also be valuable to study the pre-transfer characteristics and experiences of those who intended to transfer but ultimately did not.

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