Report

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Evaluation of Arizona's Transfer Articulation System

Arizona Academic Program Articulation Steering Committee

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EXECUTIVE SUMMARY

1. Introduction

The Arizona Board of Regents (ABOR) and the state board of directors for community colleges (state board) established a Transfer Articulation Task Force (TATF) in 1996 to bolster Arizona's articulation system and improve student access to the state university system. The resulting transfer model hinges on "a dynamic set of processes and agreements" between the community colleges and public universities. The TATF also manages the Arizona State System for Information on Student Transfer (ASSIST): a relational database containing enrollment and degree information on students attending Arizona's public universities and community college districts. Available to participating institutions, ASSIST is designed to assess the effectiveness of Arizona's general education curriculum and transfer model, and provide the community colleges and the universities information for the federal graduation rate report.

To understand the efficiency and effectiveness of the Arizona transfer system (community colleges to four-year public institutions), and the impact on participating institutions and students, the Arizona Academic Program Articulation Steering Committee (APASC) contracted with Hezel Associates, LLC, an education research and consulting firm, to conduct an evaluation of Arizona's transfer and articulation system. Our objectives were:

1. To assess the effectiveness of the Arizona General Education Curriculum (AGEC), as the mechanism to facilitate transfer;
2. To assess how well the Transfer Pathway Degrees meet user needs;
3. To analyze how students learn about and access information to facilitate the academic planning for transfer to the universities;
4. To analyze the strengths and weaknesses of the utility of the information on the AZ transfer Website az.transfer.org/cas;
5. To analyze the perceptions of the key stakeholders about the effectiveness of the AZ transfer system; and
6. To analyze the academic success of transfer students based on available data.

This report describes in detail the project methods and findings, and we offer recommendations to improve the articulation and transfer process.

2. Conclusions and Recommendations

The Arizona transfer system appears to be working well and is functioning as a tool and system exactly as intended. Through the system students are able to complete their degrees with nearly one semester FTE less coursework than was the case five years ago. Degree completion is favorable under AGEC. The benefits of the Transfer Pathways program are less certain.

In general, stakeholders are satisfied, and most feel that the system is working toward the goals of easing the transfer process for students and improving student progress

toward earning baccalaureate degrees. Because the system, in our judgment, is working effectively, large scale changes are not necessary, but improvements, especially in communications, should be made to continuously to improve the system. Such improvements would increase the number of students who know about, and subsequently use, the components of the transfer system, and would also increase consistency for all users and stakeholders.

It is Hezel Associates' assessment that, overall, the transfer and articulation system itself is working as designed and does not need major changes. Improved methods of communication and collaboration among all stakeholders, however, are essential and should be addressed immediately. Community college advisors and ATF members expressed in surveys and focus groups that the system needs considerable improvement. By and large, their peers at universities did not see the need for such substantial changes. Nevertheless, universities do not always realize the impact their changes have on the community colleges, and vice versa. Many of the problems students have are dealt with by community college personnel, while at the universities it is the successful students who are more visible. Issues may not be as obvious, therefore, to individuals at the universities. In our estimation, most of these problems can be resolved by improving and increasing the amount of communication and collaboration among all colleges and universities and their staff and students.

Hezel Associates offers the following recommendations to continue to improve the Arizona transfer system:

1. **ABOR and the community colleges should sponsor a campaign to increase student awareness of the components of the Arizona transfer system.** Regardless of whether they actually plan to complete an AGEC or transfer pathway degree, or whether or not they plan to take common courses, all students who plan to transfer from an Arizona community college to a university should be aware of all of the options available to aid in their transfer experience. Awareness of all their options will ensure that students make more fully informed decisions. More information should be made available to students, particularly regarding available, but underused, resources. As a way to increase awareness, community colleges should require mandatory orientation and/or advising opportunities before or during the students' first semester enrolled at the college.

2. **Advisors should be given additional and on-going training to ensure that they are fully aware of all components of the system so they can help students make the best decisions for their individual situations.** Training should be standardized at both the university and community college levels, and should include not only opportunities for updated information, but also specific strategies for assisting various transfer student populations. Efforts should also be made to ensure that students know who the transfer student ombudsperson(s)

are at their institution, so that they know who to go to should they be unable to find answers elsewhere. Academic advising is perhaps the most critical part of the entire transfer system and process for students. Although members of the student focus groups reported successfully moving through the process without the help of an advisor, and survey data shows instances of independent student success, good advising seems to be a critical contributor to student success.

3. **University and community college personnel should improve and increase the volume of communications regarding articulation and transfer.** The Board of Regents should establish such communication as a priority to the presidents, and they, in turn, should communicate the urgency of cross-institutional communication to their administration, faculty and staff. Concurrently, community college presidents should do the same. More specifically:
    - The Articulation Task Forces should be reviewed to determine their effectiveness, consistency and composition. The review would result in ensuring that the right people are in attendance, assessing the quality of the decision-making process and ensuring that policy issues are being addressed in a timely manner.
    - Universities and community colleges should establish policies and practices to discuss curricular changes that impact each other. Regular discussions should be related to curricula and policy and any other topics that impact transfer issues.

4. **The transfer system and its individual components should be streamlined to improve clarity, understanding, functionality and efficiency.** Respondents expressed confusion regarding the transfer pathway degrees and common course matrices, and it is clear that too many options exist, even for the savviest students. The AGECs also provide too many options and exceptions, and program-specific transfer articulation partnerships have further complicated the system. Too much specialization of program requirements and too many options have led to an unwieldy system, according to many stakeholders.

5. **The Arizona transfer website should be redesigned as a portal for advisors, faculty, staff and especially students.** Through the portal, individuals should have access, either directly or via links, to relevant information regarding the transfer process. Once the website redesign has been completed, a marketing campaign should be conducted to publicize the site to students. Two-thirds of student survey respondents had never visited the site, a figure that is far too high considering the vast amount of information available to them through the site. In particular, the website redesign should:
    - Make the website more user-friendly and easily navigable.
    - Add more images and enhance the color scheme to make it more attractive and appealing to students.

- Information should also be reviewed systematically and at regular intervals to ensure that the site is consistently up to date.
- Old information should be either completely removed from the site or archived so as not to confuse visitors.

6. **All information and resources, electronic and print, should be updated in a timely manner to reflect policy or procedural changes.** Advisors, in particular, should be informed electronically about the changes, via email and via the advisors' portal.

7. **The community colleges and universities should standardize their administrative processes related to the transfer system, such as the way in which AGEC and AGEC in progress are designated on student transcripts.** Standardization will result in less confusion among staff and fewer delays and problems for students.

8. **The universities should increase their commitment to transfer students by creating student-oriented transfer offices or centers where students can find advisors, orientation programs and one-stop/quick-stop answers**. Alternatively, the universities could designate a transfer-oriented staff person in each appropriate office on campus, such as admissions, academic advising, student affairs, registrars, etc.

9. **The community college application process should include an early alert system focusing on "older" students who have stopped out, or have been out of school for more than ten years.** This system will redress ongoing problems associated with archived student records specific to this group of students, and it will provide immediate attention to those students as they progress.

3. Methods

To accomplish the objectives of the evaluation project, Hezel Associates employed the following approach:

- Review of APASC, ABOR, AGEC, ATF, and other documents
- Conference calls and face-to-face meeting with APASC
- Surveys of students, advisors, faculty (ATFs), admissions and registrar office staff
- Focus groups of students, advisors, faculty (ATFs), admissions and registrar office staff
- Analysis of statewide student transfer data from the ASSIST database
- Analysis of the Arizona transfer website (az.transfer.org/cas)

In total, five surveys and 11 focus groups were conducted. Survey instruments were developed collaboratively with APASC members, and APASC worked with the individual institutions to compile lists for each of the surveys. Surveys were conducted entirely online and were executed between January and April. Some focus groups were

conducted in-person, either in Phoenix or on one of the university campuses, and others were held via teleconference. Some of the student focus groups were poorly attended and personal interviews were conducted to supplement the findings.

4. ASSIST Data Analysis

We conducted a number of analyses with data from cohorts of students who transferred from Arizona community colleges to ASU, NAU, or UA in 2001, 2002, 2003, 2004, and 2005. We looked at the outcomes of persistence after one year, time to graduation, one- and two-year GPA, and credits at graduation. The purpose was to see whether and to what extent students who followed the transfer pathways achieved better outcomes at the university, relative to students with other degree configurations or no degree at all. The key analysis categories were AGEC (only), AGEC plus Associate's degree, Associate's degree only (defined as AAS or AGS, or other Associate's earned before 2000). These categories were compared to students who came to the university with only transfer credits (i.e., no degree and no AGEC). Several other variables—demographics, entry credits, etc.—were included in the analyses as controls.

- *One-Year Persistence*
  Students with the AGEC (only) are 50 percent more likely to persist after one year, both compared to students who come with only transfer credits as well as to students with the AGEC plus Associate's. Students with an Associate's degree only (defined as AAS or AGS, or other Associate's earned before 2000) are significantly *less* likely to persist after one year than students with just transfer credits. Transfer hours and average earned semester hours at the university (to date) are also strong predictors of persistence after one year.

- *Time to graduation*
  We looked at two-, three-, four-, and five-year graduation as outcomes. These analyses identified a set of variables that consistently—and independently--impacted the likelihood of graduating within any time frame, with some small variations from analysis to analysis. Students with an AGEC (only), women, and older students all have an advantage in terms of time to graduation. Students with an AGEC plus Associate's had an advantage—though smaller than that for an AGEC only—only for two- and three-year graduation outcomes. Possession of an AAS or AGS (only) proved to confer no advantage over having just transfer credits. In the two-year and three-year analyses, there was also a slight effect for cohort in that later cohorts were somewhat less likely to graduate within the specified time period.

- *GPA*
  Students entering university with an AGEC (only) had significantly higher GPAs after two and four semesters than students with just transfer credits. Students entering with an Associate's degree had about half as big an advantage. Possessing an Associate's degree in conjunction with the AGEC provided comparable (though

slightly less) value than that provided by the AGEC alone. Female students, white students, and older students also did better in terms of GPA. Students with more transfer hours and more average earned semester hours at the university also had higher two and four semester GPAs.

- *Credits at graduation*
  Students who possess an AGEC (only) at university entry can graduate with about three and a half fewer credits than students who enter with transfer credits only. Students with an AGEC plus an Associate's and students with an Associate's only (AAS, AGS) do essentially no better than students with just transfer credits. Females and white students each manage to graduate with about two fewer credits than males and non-whites. Independent of spring/fall transfer, students from each succeeding year graduate with almost two and a half fewer credits than those from the year before, holding all other variables constant. This comes to about 12 credits across the 5 years represented in the dataset. Within degree/certificate categories, the effect is somewhat stronger for students with an AGEC only and students with just transfer credits, but for all categories the effect is at least two credits per year.

- *Community college effects*
  In analyses comparing Maricopa, Pima, and the rural community colleges, Pima students had better outcomes for one-year persistence, graduation within all time frames, and credits at graduation. Pima students had no advantage in terms of GPA. Only in the analysis of two/three/four year graduation and credits at graduation did Maricopa students show better outcomes than students from the rural community colleges. Note: only degree or AGEC earners were included in these analyses.

In sum, students who earn an AGEC and transfer with a lot of credits—but who don't get an Associate's degree—and who enroll full time at the university stand the best chance of persisting, earning higher GPA's, graduating in a timely fashion, and graduating with fewer credits. It also helps to be female and to be an older student. Cohort effects are inconsistent among the various outcomes, but later cohorts are clearly managing to graduate with fewer credits than earlier cohorts.

5. Survey and Focus Group Findings

The majority of respondents to the university student survey were attending or had attended Arizona State University. More than half (59%) had transferred from a Maricopa Community College, and 28 percent had transferred from one of the rural colleges (defined in this study as all community colleges except those in the Maricopa and Pima districts).

Not quite half of community college student respondents (48%) were attending a Maricopa Community College, while Pima students had greater representation (23%) than in the university student survey and rural college students were nearly the same

(29%). Eighty-six percent of community college student respondents indicated that they are at least "somewhat likely" to transfer to an Arizona public university, while five percent were "somewhat unlikely" and nine percent "very unlikely." Arizona State University is the most popular transfer destination among respondents, as 35 percent anticipate that they will transfer to ASU. Twenty-seven percent of respondents said that they plan to transfer to the University of Arizona, while 17 percent expect to go to Northern Arizona University and 12 percent were unsure which university they will transfer to. Approximately two-thirds of student respondents to each survey were white, and the majority of each were female.

Slight majorities of both groups of students reported that they meet (or met) with an academic advisor at their community college at least once per semester. Seven percent of university students and 11 percent of community college students said that they had never met with an academic advisor at the community college. Among community college students, those who expect to go to NAU visit with an academic advisor most frequently (65% at least once per semester); while students that do not expect to transfer to an Arizona public university do so least often. Students from both surveys who either transferred from or are attending one of the rural community colleges were more likely than other respondents to report having met with an academic advisor more than once per semester. White students from both surveys indicated having met with their academic advisor less frequently than did minority students. Meeting with a faculty advisor was the most common additional activity that both groups of students engaged in to plan for transfer.

Forty-one percent of university student respondents indicated that they felt "very prepared" for university studies when they transferred from their community college. An additional 44 percent reported that they felt "somewhat prepared," and 15 percent indicated some level of unpreparedness. There were very minor differences in the reported level of preparedness based on which community college the student transferred from, but students at NAU were most likely to feel at least "somewhat prepared" while students at ASU were most likely to indicate feeling unprepared. There were also only very minor differences in reported level of preparedness based on how often the student met with an academic advisor prior to transferring.

Overall Transfer System

Satisfaction with the Arizona transfer system was generally quite high among the various groups of stakeholders, with the portion of respondents who are at least "somewhat satisfied" ranging from 84 to 93 percent. The student surveys had the highest percentages of dissatisfied respondents, and community college students, in particular, were the least satisfied of all the groups surveyed. Advisors from the Maricopa community colleges indicated lower overall satisfaction than those from the other community colleges, and those from the rural colleges had the highest overall satisfaction. Among university students, the more prepared for university studies a student reported feeling, the more likely they were to be satisfied with the transfer

experience. University students that transferred from one of the Maricopa community colleges were slightly more likely than other students to feel dissatisfied with the experience as a whole. Community college students attending one of the rural community colleges and those who plan to transfer to NAU were the least likely to be dissatisfied with the transfer experience as a whole, while Maricopa students and students intending to transfer to ASU were most likely to be dissatisfied.

Moderate majorities of advisors (69%), community college (63%) and university students (75%) felt that sufficient information is available to students regarding the transfer process. Students had similar levels of agreement that sufficient information is available regarding the AGEC, transfer pathway degrees and common course matrices, although regarding the AGEC, students that transferred from a Maricopa college were more than twice as likely to feel that sufficient information was not available as students from Pima or the rural colleges.

Two-thirds of advisors reported that they feel sufficiently aware of all components of the Arizona transfer system, but 34 percent do not feel sufficiently aware. An even greater percentage of respondents (47%) indicated that they do not feel that they know of changes that are made to the transfer system in a timely manner when they are made. Advisors from the rural community colleges were far more likely to feel as though they are not sufficiently aware of all components of the transfer system or made aware of changes in a timely manner when they are made as compared to their counterparts from the urban districts.

Respondents to the university student survey were asked to describe any problems they encountered during the transfer process, and respondents to the advisor survey were also asked what some of the most common problems or difficulties they had observed students face with the transfer process. Students and advisors gave very similar problems, with the main ones including:

- issues with the transferability of courses and credits
- issues with advising
- confusing and/or misinformation
- problems and delays in admissions and with transcripts

Students were asked what they considered the easiest and most difficult parts of the transfer process. The most common responses to the easiest part included transferring credits and grades, paperwork and administrative details, and meeting and working with academic advisors. Ironically, the same three responses were also the most frequently given responses to the most difficult part of the process, particularly administrative issues and paperwork.

Advisors, ATF members and admissions and registrar staff were asked to give the greatest strengths and weaknesses of the system as a whole, and to offer recommendations for improvement. The most common responses include:

Greatest strengths:

- ease of transfer and the fact that courses are guaranteed to transfer
- available information resources, such as the course equivalency guide and the CAS website
- communication and collaboration between the community colleges and universities
- consistency and ease of use

Greatest weaknesses:

- lack of consistency and communication
- too many changes being made resulting in out of date information
- system is too complicated and difficult to use
- lack of awareness among and use by students

Recommendations for improvement:

- bring greater standardization to the process
- better advising for students and more training for advisors
- improve and increase communication between the community colleges and universities
- simplify the process and make it more user-friendly
- publicize the transfer system to students more

Arizona General Education Curriculum (AGEC)

Awareness and familiarity of the AGEC is higher among advisors and faculty than it is among students. Among advisors and faculty, nearly all are at least "somewhat familiar" with the AGEC, while more than one-quarter of both community college and university students indicated that they are not familiar with the AGEC. Nearly all (91%) community college advisors indicated that they are "very familiar" with the AGEC, compared to 51 percent of university advisors. Students who are currently attending or who transferred from Pima Community College had the highest levels of familiarity with the AGEC, while students who are attending or who transferred from Maricopa were far more likely to not be familiar. Likewise, students who intend to transfer to UA or who already transferred to UA had the highest levels of familiarity with the AGEC.

All of the stakeholder groups surveyed are generally satisfied with the AGEC, with the percent of respondents indicating that they are either "somewhat satisfied" or "very satisfied" ranging from a low of 87 percent among university students to a high of 94 percent among advisors. There was a high level of agreement between advisors and ATF members that the AGEC has been successful in accomplishing two of its goals: to reduce barriers for students to transfer, and to improve student progress toward

meeting baccalaureate degree requirements. Nearly 90 percent of advisors and ATF members agreed that the AGEC has accomplished each of those goals.

University respondents to the admissions and registrar survey were also asked how likely a student who otherwise would not be admitted to their university but had completed an AGEC would nonetheless be granted admission. More than two-thirds (69%) reported that a student would be at least "somewhat likely" to be admitted under that scenario. Admissions and registrar staff were also asked about a number of process issues related to the AGEC, and in general the consensus was the AGECs are not processed in a standardized way at the community colleges or the universities.

Among students there seems to be some confusion over the AGEC. Among those who indicated that they were at least somewhat familiar with the AGEC, approximately three-quarters of community college (76%) and university students (72%) indicated that they thought the requirements for the AGEC were clear (either agreed or strongly agreed with the statement that the requirements were clear). In total, 48 percent of university students were either not familiar with the AGEC or were unclear about its requirements, while 45 percent of community college students surveyed were either unfamiliar or unclear about the AGEC.

Despite the fact that so many students are unfamiliar with or unclear about the requirements for the AGEC, 44 percent of university students reported that they completed an AGEC while at the community college, and 61 percent of community college students indicated that they plan to complete an AGEC. The AGEC-A is the most popular, as twice as many university students indicated having completed the AGEC-A as reported completing the other two combined. The AGEC-A is also more popular among community college students, although 41 percent of community college students who said they will complete an AGEC were unsure which of the three they will complete.

Transfer Pathway Degrees

Advisors and ATF members indicated a slightly lower level of familiarity with the transfer pathway degrees than with the AGEC, but 88 and 96 percent were at least somewhat familiar, respectively. Students, on the other hand, showed a higher level of familiarity with the transfer pathway degrees than with the AGEC. Whereas 28 percent of both community college and university students were "not familiar" with the AGEC, only 14 and 16 percent, respectively, were not familiar with transfer pathway degrees. Similar to the AGEC, advisors from community colleges had a much higher level of familiarity with the transfer pathway degrees than those at universities.

Among students who were familiar with the transfer pathway degrees, 59 percent of university students completed a transfer pathway while at the community college and 81 percent of community college students said that they plan to complete a transfer pathway degree before transferring. Including those who were unfamiliar with the

transfer pathway degrees, just less than 50 percent of university student respondents completed a transfer pathway degree, while 70 percent of community college respondents expect to complete one while at their community college. Similar to the AGEC, the Associate of Arts (AA) is the most popular transfer pathway degree.

Additional survey findings related to the transfer pathway degrees:

- Advisors, ATF members and admissions and registrar staff indicated a high degree of uncertainty as to whether or not students who complete transfer pathway degrees are better prepared for university studies than those who do not.
- Similar to the AGEC, nearly a quarter of respondents for each of the groups surveyed indicated some uncertainty about the requirements for successful completion of transfer pathway degrees, as well.
- Only 54 and 58 percent of advisors and ATF members, respectively, agreed to some extent that the requirements have remained stable over time.
- More than two-thirds (69%) of community college ATF members felt that the impact of the transfer pathway degrees on curricular planning and delivery at their institutions has been positive, but there were differences between the colleges. ATF members from Pima were most likely to agree that the impact has been positive, whereas Maricopa members were most likely to disagree and to be unsure.

Common Course Matrices

Awareness of the common courses and common course matrices is relatively high, as at least 80 percent of respondents in each group surveyed were at least somewhat familiar. Compared to awareness of the other two primary components of the transfer model, however, a higher percentage of both advisors and ATF members are not familiar with the common course matrices. Advisors at the community colleges had a higher level of familiarity with the common courses than those from the universities, but ATF members from universities were more familiar with the matrices than their community college peers.

Among both community college and university students who were at least somewhat familiar with common courses 64 percent indicated that they had taken or plan to take common courses. Very small percentages (6% and 4% of community college and university students, respectively) said that they had not taken common courses, while nearly a third of respondents were not sure or did not know. Thus, there was a high degree of uncertainty and unfamiliarity regarding common courses in both student populations. For both groups of students the primary reasons they took/plan to take common courses are that it was part of their degree program or that they plan(ned) to stay at the community college for as many credits as possible.

Additional survey findings related to the common course matrices:

- Approximately three-quarters of both advisors and ATF members surveyed agreed that the common course matrices have been effective in helping students plan for transferring.
- A majority of ATF members agreed that the common course matrices have been stable and flexible enough to allow for adequate curriculum planning and room for growth at their institutions.

Strengths, weaknesses and recommendations were also given from the different groups specifically regarding the AGEC, transfer pathway degrees, and common course matrices. With some variation they were very similar to those given regarding the transfer system as a whole.

Arizona Transfer Website

The different groups surveyed use the Arizona transfer website very differently. Advisors use it most frequently, as 40 percent visit the site daily, 72 percent use it at least once per week, and only six percent indicated that they have never used the site. The group that uses it next most often is admissions and registrar staff, of whom 61 percent reported using it at least once per week. Nearly half (49%) of ATF members use the site less than once per month.

Most surprising is how few students use the website at all, regardless of frequency. Two-thirds of both community college and university students surveyed have never visited the transfer website. Those university students who have used it did so more often than their community college peers, as 27 percent used it at least once per month. Only seven percent of community college students visit the site at least once per month, on the other hand, and the majority who have visited only do so less than once per month. Community college respondents at one of the rural colleges were most likely to have never visited the site (74%), while Pima students were most likely to have visited it (46% have visited it at any frequency).

Across the board the highest ratings for the transfer website were given for the quality of information it provides. At least 85 percent of each group of respondents rated the site "good" or "very good" on quality of information. Students who have visited the Arizona transfer website in the past have most frequently done so for the Course Equivalency Guide. Over 80 percent of both groups of students who have used the website have used the Guide. Many students have also used the website to find information about the three universities.

Focus Group Findings

The focus groups reinforced and added depth to the survey findings. The vast majority of focus group participants in the groups of advisors, ATF members, and admissions and registrar staff viewed the overall Arizona transfer system as being effective. With the exception of one group, participants view the system as one that needs "tweaking" to improve it, rather than wholesale changes. Positive factors about the system include:

- The AGEC is a good concept and works well for what it is intended to do, i.e., transfer a block of courses to meet general education requirements at a university.
- The pathway degree programs, while seemingly under-used, are quite effective for students who know what they want to do.
- The common course matrices are useful tools for advising.
- Participants at all levels within the community colleges and universities appreciate the opportunity to work together on issues related to the transfer system.

The positive nature of the focus groups is addressed in broad strokes, emphasizing the effectiveness of the major structure and needed minimal discussion to reinforce that issue. Therefore, considerable time was spent in discussing the problems in order to improve the system. So while much of the reported discussion focuses on "what is wrong," it is important to keep in mind the larger picture. In fact, the majority of the discussions dealing with improvement focus not on the structure of the system, but the implementation of certain components, communications and larger philosophical issues related to the different cultures of the community colleges and universities. The main issues that need to be addressed include:

- Both university and community college personnel can see the need for better communication between the two levels. Community college personnel are much more vehement about this need.
- There is a need to improve the quality and timeliness of information related to transfer issues. Given the fast-paced educational environment in which the system operates, accurate and consistent information about the frequent changes in curricula, program requirements, etc. need to be communicated in a timely manner.
- Collaborative decision-making needs to be increased. From the community college perspective, decisions impacting them are made by the universities without the appropriate dialogue and then passed "down" to the community colleges.
- Many of the issues related to the AGEC, transfer pathway degrees and the common course matrices are related to lack of communication and accurate information. Others relate to the growing number of options in offerings, i.e., too many AGEC's, too many transfer pathway degrees. This is offset by a growing number of exceptions to these components as well, resulting problems for students as they move through the system.

Students that participated in the focus groups, too, were generally positive about their transfer experiences and the transfer system. In general, Arizona students do not start planning their transfer until the semester preceding their move to the university. Exceptions are those students who are in very prescribed programs like nursing.

Students do not really view the transfer process from a systemic perspective – they focus mainly on what will transfer from the community college to the university. Findings related to the three major components of the transfer process show that:

- Many, if not most, students are not very well informed about the AGEC. Many simply know that it is a way to take care of general education requirements, but lack an understanding of its various options and exceptions.
- Most students are not familiar with the pathway degree programs, nor do they use them.
- Most students are not familiar with the common course matrices; however many students know about the course equivalency guide and find it useful.

Both groups of students view the community colleges as more welcoming or friendly settings than the universities, with community college advisors interested in helping the students as individuals, while the university advisors are obligated to help them. Many students have limited contact with advisors at all, indicating that they move through the system on their own, utilizing websites, advice from friends and checklists. The main transfer issues that need to be addressed from a student perspective include:

- Better communication between university and community college personnel related to advising, program requirements and student records (transcripts, course evaluation, etc.).
- A need for more knowledgeable advisors, especially at the community college level where they expect to receive better information about university programs.
- A need for targeted assistance for transfer students, especially at the universities. Suggestions include transfer centers, transfer orientation programs and a general commitment to helping transfer students.

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INTRODUCTION

Arizona's explosive population growth, along with a paucity of higher education institutions, low completion rates, and limited access to postsecondary education by many citizens, challenge the state and specifically the Arizona Board of Regents. Ensuring effective access to higher education at affordable tuition rates requires efficiency on the part of institutions and the students they serve.

Arizona has room to grow in the educational attainment of its citizens. Between 1988 and 1992, Arizona's college participation ranking fell dramatically, although its participation percentage did not fall significantly. The college participation rate rose in 2000, for the first time in twelve years.

A key element in the strategy toward building college participation and completion in Arizona has been the assurance of transfer from Arizona's robust community colleges to one of the three state universities. The success of the strategy, however, is highly dependent on a sound articulation plan, which permits students in community colleges to move through their academic programs with the security that the courses in which they enroll will be accepted at the destination university.

ABOR and the state board of directors for community colleges (state board) established a Transfer Articulation Task Force (TATF) in 1996 to bolster Arizona's articulation system and improve student access to the state university system. The resulting transfer model hinges on "a dynamic set of processes and agreements" between the community colleges and public universities. The TATF also manages the Arizona State System for Information on Student Transfer (ASSIST): a relational database containing enrollment and degree information on students attending Arizona's public universities and community college districts. Available to participating institutions, ASSIST is designed to assess the effectiveness of Arizona's general education curriculum and transfer model, and provide the community colleges and the universities information for the federal graduation rate report.

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- Analysis of statewide student transfer data from the ASSIST database
- Analysis of the Arizona transfer website (az.transfer.org/cas)

For many analyses in this report, three groups were created for comparing community college respondents and community college student data. All respondents and data from the Maricopa Community Colleges are grouped as "Maricopa CCs," while respondents and data from Pima Community College are their own group. All of the other community colleges are grouped together as the "Rural CCs" in these analyses.

This section describes in detail the methods employed in each of the major activities of the project: surveys, focus groups, analysis of ASSIST data, and the analysis of the transfer website.

A. SURVEYS

Five surveys were developed to solicit experiences and perceptions from five groups of stakeholders:

- Academic advisors
- Faculty members of Articulation Task Forces (ATFs)
- Admissions and registrar staff
- University students who have transferred from an Arizona community college
- Community college students who intend to transfer to an Arizona public university

Each survey instrument was developed by Hezel Associates collaboratively with APASC members. Once developed and approved by APASC, each survey was created and administered online and was distributed via email to lists provided by APASC. Each survey was analyzed using frequencies and cross tabulations. Cross tabulations were run for all surveys except the admissions and registrar survey, which included too few respondents to warrant them. For the advisor and ATF surveys, cross tabulations were run only by type of institution (community college or university), and in some cases within types of institutions by particular institutions (ASU, NAU, UA, etc). Student cross tabulations included university or community college attending, institution transferred from or institution of planned transfer to, frequency of meeting

with an academic advisor, preparedness for university studies, gender, race/ethnicity, and age.

Specific details regarding the design and execution of each survey, the composition of each group and issues that arose during data analysis are described below. Survey instruments can be found in Appendix 3.1., and full analyses of each survey can be found in Surveys 1 and 2.

1. Advisor Survey

The advisor survey was the first survey instrument developed and administered in the project. Before administering the survey to the full list, a small group was chosen to pilot the survey. The pilot survey was sent in mid-January to eight advisors, including at least one from each university and from the two largest community colleges, Pima and Mesa. Three individuals responded with detailed feedback and modifications were made to the survey.

After changes based on pilot feedback were completed, the advisor survey was administered to the full list of academic advisors provided by the colleges and universities. Names were submitted by all institutions except Diné College and Mohave Community College, for a total of 906 individuals. Three email requests to complete the survey were sent on January 25, January 31, and February 6. Undeliverable emails numbered either 52 or 53 for each of the three requests, and advisors who completed the survey and provided their name and email address were removed from the list for subsequent requests. Problems were reported with some advisors, particularly at Arizona State University, not receiving the emails due to spam filter settings, so requests were also sent via the AAATF listserv and by APASC. A total of 484 completed surveys were received, for an overall completion rate of 53 percent, although some survey completers were likely not on the original contact list.

2. ATF Survey

The survey of Articulation Task Force members was sent to all individuals listed as current members of one or more ATFs for 2006-2007 on the Arizona CAS transfer website. A total of 590 individuals were listed as ATF members on the site, and emails were sent to the list on February 13, February 20, and February 27. Respondents who provided their names and email addresses were removed from the list for subsequent emails, and the number of undeliverable emails ranged from 33 to 48 for the three requests. Similar to the advisor survey, it was apparent that some individuals, especially at ASU, were not receiving the email requests due to spam filters. To get around spam filters, reminders were sent by APASC to those individuals who had not completed the survey. A total of 279 surveys were completed, for a 47 percent response rate.

3. Admissions and Registrar Survey

The admissions and registrar survey list, like the advisor list, was compiled by requesting names from the colleges and universities. Institutions were asked to submit

the names of admissions and registrar staff in a variety of roles, but primarily administrative. All three universities and 13 community colleges submitted at least one name for the survey, for a total of 107 people. Three email requests were sent to complete the survey, on February 23, February 28, and March 6. There were five, five and two undeliverable emails from the three requests, respectively. Reminders were also sent by APASC. Fifty-seven individuals completed the survey, for a response rate of 53 percent.

4. University Student Survey

The list of university students was developed by requesting the names of students who had transferred from an Arizona community college from each of the three universities. Specifically, students were to be picked at random from the population meeting the following criteria:

- Transferred from an Arizona community college to the university at any time from Spring 2002 semester through the present
- Have a minimum of 30 credits from the Arizona community college
- A minimum of 75% of all transfer credits from Arizona community colleges
- Include students who are currently enrolled, who have graduated and/or who have left school
- Exclude students who have transferred from another Arizona public university

The initial target number of completions was 600, and the size of the necessary list of students was calculated based on two assumptions: that the completion rate would be 15 percent; and that 15 percent of emails on the list would likely be invalid or otherwise would result in bounce backs. The assumed 15 percent invalid emails were factored into the total list size as an over sample percentage, so that it was assumed that 15 percent of the 85 percent of the list with valid emails (the full list less 15 percent) would actually complete the survey. As a formula to calculate list size, this reads:

List size = (Target number of completions / Completion %) / (1 – Over sample rate)

Thus, the size of the list was determined to be 4,706 names. This number was rounded up to 5,000 and the target number of completed surveys, therefore, was increased to 638.

Next, the size of the list necessary from each institution was calculated using total enrollment as reported in the National Center for Education Statistics' Integrated Postsecondary Education Data System (IPEDS). The size of each university's list was proportional to total enrollment, so that Arizona State University, which accounts for over 53 percent of enrollment between the three universities, would account for 53 percent of the 5,000 students on the survey list. Each of the three universities were to then supply names and email addresses for the calculated number of students using a random sample of students who met the criteria listed above. Table 1, below, shows each of the calculated numbers described above, as well as the sizes of the lists actually

provided by each of the institutions, the number of students from each university who completed the survey, and the response rate.

Table 1. University Student Survey List and Completions

Institution	Enrollment (IPEDS)	List Size Requested	Target Completed Surveys	List Size Provided	Actual Completed Surveys	Response Rate
Arizona State University	64,211	2,675	341	2,675	512	19.1%
Northern Arizona University	18,773	782	100	797	107	13.4%
University of Arizona	37,036	1,543	197	883	92	10.4%
Total	**120,020**	**5,000**	**638**	**4,355**	**713***	**16.4%**

*Two respondents indicated that they had never attended an Arizona public university

Arizona State University and Northern Arizona University both provided the requested number of names or more, but the University of Arizona provided significantly fewer names than requested. Although the response rate for ASU was higher than the other two institutions, the absence of more names from UA was likely a major factor that contributed to the UA target number of completions not being met.

Five email requests to complete the survey were sent to students, on March 16, March 20, March 23, March 26 and March 28. Additionally, APASC representatives from each of the institutions sent reminder emails on Hezel Associates' behalf. The number of undeliverable emails ranged from 568 to 703 for the five email requests. An incentive was also used to encourage participation, as students were offered an entry into a random drawing for one of five $100 gift cards to their university bookstore if they submitted their name and email address. Names and email addresses were also used to remove students from email lists once they had completed the survey. Overall, the 713 completed surveys exceeded the target number and represented a 16 percent completion rate. Not including undeliverable emails, the completion rate was even higher at greater than 19 percent.

Two significant problems were encountered in the analysis of the university student survey data. Both involved the use of drop down boxes in the survey form and an apparent oversight of the questions by students. In the case of Questions 3 and 10, drop down boxes were used to ask respondents for the university they are currently attending and the community college they transferred from, respectively. Both questions presented choice options in alphabetical order, so that the first choices – which were the defaulted answers since they were first alphabetically – were Arizona State University and Arizona Western College, respectively. Both questions were also the very first questions on their respective pages, and it became apparent while analyzing the survey that a significant number of students had passed over one or both questions without selecting their proper university and/or college. In the case of Question 3 the inaccurate answers were detected because student email addresses

would indicate that they attended NAU or UA, while their choice was ASU, while in the case of Question 10 the number of AWC responses was 155, clearly a number that was far higher than it should have been.

Arizona State University responses to Question 3 were checked manually to ensure that the student actually attends or attended ASU. For respondents who had provided their name and/or email address, students were cross-checked against the original lists provided by the institutions to verify their proper institution. As a result of this cross-check, 15 responses were changed from ASU to UA and 17 responses were changed from ASU to NAU. Forty-four additional responses could not be verified as correct or incorrect, and these responses were therefore excluded from subsequent cross tabulations so that only verifiable students were included.

Of the 155 respondents who had left Arizona Western College as their response for Question 10, 104 were from ASU while 20 were from NAU and 22 were from UA. For these students who could be identified as being from one of the three universities, Hezel Associates sent the records to the institutions to look up the community college the students had transferred from. The majority of ASU students had, in fact, transferred from somewhere other than AWC, while NAU found that many of the students had actually transferred from AWC and the University of Arizona reported that all 22 students had transferred from AWC. The proper community college of transfer was changed for those students who were found to have gone somewhere other than AWC, and ultimately only 14 original AWC responses could not be verified and were therefore excluded from subsequent cross tabulations.

5. Community College Student Survey

The list of community college students was generated in a similar manner as the university student survey list, described above. Each community college was to supply Hezel Associates with a random list of students who met a number of criteria, all of which were used to identify intent to transfer to an Arizona public university. These criteria include:

- Have completed a minimum of 30 credits at the community college
- Credits should include the following coursework (specific course names and numbers not specified):
  - English Comp I and II
  - College Mathematics or above
  - an Intensive Writing and Critical Inquiry course

Similar to the process used to determine list size for the university student survey list, the target number of completions for the community college student survey was set at 360. The assumptions used to determine the size of the list were slightly different, with a 15 percent assumed completion rate and a 20 percent over sample rate. An additional assumption was that the percent of the student population that intends to transfer to an Arizona public university is the same at each institution. This assumption was made to

make calculating the size of the lists more straight forward, rather than accounting for institutions that have more intended transfer students than others.

Using these assumptions, the total size of the list was determined to be 3,000, and the list size from each institution was calculated accordingly. For institutions whose requested list sizes were small, Hezel Associates requested that they send a minimum of 100 students. The target numbers of students and survey completers, as well as the actual list sizes, number of completed surveys and response rates, are listed below in Table 2. Although each Maricopa community college is listed separately, the Maricopa Community College District generated the list for all institutions, and information for the district as a whole can also be found in the table below.

Pima Community College submitted three times as many names as requested, while Cochise and Yavapai Colleges also submitted additional names. The size of the actual list, largely from additional names from these institutions, was nearly 50 percent larger than originally requested. Central Arizona College, which does not publish student information in a public director, did not submit names to Hezel Associates for the survey. Rather, CAC agreed to send out email requests to students on Hezel Associates' behalf.

Table 2. Community College Student Survey List and Completions

Institution	Enrollment (IPEDS)	List Size Requested	Target Completed Surveys	List Size Provided	Actual Completed Surveys	Response Rate
Arizona Western College	6,761	101	12	101	7	6.9%
Central Arizona College	6,388	95	11	0*	4	N/A*
Chandler/Gilbert CC	8,940	134	16	0**	16	N/A**
Cochise College	4,610	69	8	416	29	7.0%
Coconino County CC	3,816	57	7	46	6	13.0%
Eastern Arizona College	5,239	78	9	110	16	14.5%
Estrella Mountain CC	5,978	89	11	0**	10	N/A**
Gateway CC	7,846	117	14	0**	10	N/A**
Glendale CC	20,070	300	36	0**	38	N/A**
Maricopa CCD (all colleges)	125,683	1,877	225	1,849	198	10.7%
Maricopa Skill Center	1,243	19	2	0**	0	N/A**
Mesa CC	26,528	396	48	0**	38	N/A**
Mohave CC	5,782	86	10	100	15	15.0%
Northland Pioneer College	4,253	64	8	87	9	10.3%
Paradise Valley CC	8,717	130	16	0**	15	N/A**
Phoenix College	12,549	187	22	0**	24	N/A**
Pima CC (all campuses)	30,884	461	55	1,371	96	7.0%
Rio Salado College	17,415	260	31	0**	24	N/A**
Scottsdale CC	11,261	168	20	0**	13	N/A**
South Mountain CC	4,561	68	8	0**	10	N/A**
Southwest Skill Center (EMCC)	575	9	1	0**	0	N/A**
Yavapai College	7,422	111	13	234	29	12.4%
Total	**200,838**	**2,999**	**360**	**4,314**	**427*** **	**10.1%**

*Central Arizona College would not release student names and instead contacted students on Hezel Associates' behalf. The total number of names emailed is unknown.
**Students from the Maricopa community colleges were submitted en masse, and individual numbers from each college are indistinguishable. See Maricopa CCD (all colleges).
***18 respondents indicated that they are not currently attending an Arizona community college

Five email requests were sent to the group of community college students, on March 15, March 20, March 23, March 26 and March 28. Additionally, APASC representatives from sent a number of reminder emails on Hezel Associates' behalf. The number of undeliverable emails ranged from 469 to 845 for the five email requests. An incentive was also used to encourage participation, as students were offered an entry into a random drawing for one of five $100 gift cards to their college bookstore if they

submitted their name and email address. Names and email addresses were also used to remove students from email lists once they had completed the survey.

Although the total size of the list was significantly larger than requested, the number of completed surveys did not follow suit. The total number of completed surveys, 427, was higher than the original target, but the response rate was low at just over ten percent. Not including email addresses that were undeliverable, the response rate was slightly higher at 12 percent.

Unlike the university student survey, no significant data problems were encountered in the analysis of the community college student survey. Arizona Western College responses to Question 3, which asked what community college the respondent is currently attending, were double-checked to ensure accuracy but a problem similar to that encountered in the university student survey was not detected. One student response was removed from the survey analysis because it contained only irrelevant and juvenile responses.

B. Focus Groups

Focus groups were conducted to verify and add depth to the survey findings. A total of 12 groups were to be conducted of random samples of survey respondents, but only 11 groups were ultimately conducted and the groups were, by and large, filled by availability rather than random selection. The groups were recruited by Hezel Associates with the assistance of APASC, and focus groups were conducted both in-person and via teleconference by DMD Consulting in collaboration with Hezel Associates. Focus group protocols were developed collaboratively by the DMD and Hezel teams, and the focus groups were conducted by DMD. All focus groups were recorded. This section describes specific issues encountered with the administrative focus groups (advisors, ATF members and admissions and registrar staff) and the student focus groups.

1. Administrative Focus Groups

Six administrative focus groups were originally to be conducted, one each of community college and university representatives of advisors, ATF members, and admissions and registrar staff. Ultimately, however, only one admissions and registrar focus group was conducted due to a small number of survey respondents, and community college and university representatives were combined into a single group. Details of the five focus groups are outlined in Table 3, below.

Table 3. Administrative Focus Groups

Focus Group	Date	Location	Recruited Participants	Actual Participants
University Advisors	3/28/2007	Phoenix	14	13
Community College Advisors	3/28/2007	Phoenix*	17	10
Admissions and Registrar Staff	3/29/2007	Phoenix	18	16
University ATF Members	3/30/2007	Phoenix*	14	11
Community College ATF Members	3/30/2007	Phoenix	12	8

*Includes participants via teleconference

Focus groups of advisors and ATF members were originally scheduled to take place on March 8th and 9th, but were delayed due to a poor initial response. Initially, random lists of between 40 and 50 survey respondents were drawn for the advisor and ATF focus groups, and email invitations were sent to the randomly drawn individuals. The randomization was intended to ensure that participants were in relative proportion to survey respondents, so that there were not too many or too few advisors from Pima Community College, for instance. Again, however, too few people were available to participate and rather than drawing additional random lists of survey respondents, in some cases all survey respondents were invited to participate. For the admissions and registrar group, all survey respondents were invited to participate from the beginning as there were too few respondents to warrant drawing a random list. Invitations were sent by email by Hezel Associates and by APASC.

Ultimately all five groups were filled to a satisfactory number, and although each group had individuals who had RSVP'd but who did not actually participate, each group had at least eight participants. Although groups were filled largely by availability and with less emphasis on balancing representation from different institutions, rural community colleges were well represented in the community college groups, as were Pima and Maricopa, and all three universities were well represented in the university groups.

All five groups lasted a minimum of 90 minutes, and with the exception of two groups, all individuals participated in-person. Two groups, of community college advisors and university ATF members, also included three and two people, respectively, who participated via teleconference. Participants who drove to Phoenix to join the focus groups in-person were reimbursed for their mileage by APASC at the state mileage rate.

2. Student Focus Groups

Six focus groups of students were initially planned and six were conducted, although some of the groups ended up being different than originally planned. The six planned groups included:

- University student survey respondents at Arizona State University
- University student survey respondents at Northern Arizona University
- University student survey respondents at the University of Arizona
- Community college student survey respondents at the Maricopa Community Colleges

- Community college student survey respondents at Pima, Central Arizona, Arizona Western, Cochise and Eastern Arizona
- Community college student survey respondents at Coconino, Mohave, Northland Pioneer, and Yavapai

All six groups were planned to be in-person on April 3rd, 4th and 5th, with the university groups on their respective campuses and the community college groups at relatively central locations to the colleges. The Maricopa group was to be held at the Maricopa Community College District offices, the Pima-based group in Tucson at Pima Community College, and the Coconino-based group in Flagstaff at Coconino Community College. Similar to the administrative groups, students were chosen at random to participate in the groups, but poor response again forced the lists to be expanded to nearly every survey respondent. Invitations were sent by email from Hezel Associates and from APASC.

Only two groups – of UA and ASU students – were recruited sufficiently to be held on their originally scheduled dates, while the others were all postponed and were to instead by held by teleconference. Although the ASU student group was recruited to a sufficient number, only two students came to the group at the designated time. The group was held with these two students, but personal interviews were conducted of two additional students who had RSVP'd but who did not attend in order to amplify the data. Nine of the 11 students who had RSVP'd for the University of Arizona group actually participated.

The four remaining groups that were originally scheduled to take place in-person were postponed by a week or more and were scheduled to take place via teleconference. The community college groups were reorganized from their original structure so that Pima students were to have their own group and Maricopa was to continue to have its own group, while all of the other colleges were grouped together into a rural community college focus group. The Pima group was filled by students in a STU210 "Transfer Strategies" class, and included students who had not previously completed the community college student survey. The other two community college groups and the NAU group were recruited from the original lists of survey completers and email invitations were sent by Hezel Associates and APASC. In some cases academic advisors were asked to assist in the recruiting process by contacting students directly to ask for their participation. Details of each of the focus groups can be found in Table 4, below.

Table 4. Student Focus Groups

Focus Group	Date	Location	Recruited Participants	Actual Participants
University of Arizona Students	4/4/2007	Tucson	11	9
Arizona State University Students	4/5/2007	Phoenix	7	5*
Pima Community College Students	4/13/2007	Teleconference	N/A	9
Northern Arizona University Students	4/13/2007	Teleconference	6	4
Maricopa Community College Students	4/16/2007	Teleconference	9	6
Rural Community College Students	4/23/2007	Teleconference	9	3

*Only two students participated in the focus group; three additional students participated via a personal interview

Turnout for the rural community college student focus group was disappointingly low, and the six students who had RSVP'd but who did not participate were contacted to attempt to add personal interviews to the data. None of the six were able to be interviewed, however, due to a combination of unavailability and lack of response.

All students who were invited to the focus groups were offered a $25 incentive to encourage their participation. The $25 incentive was paid to all who participated. In the case of the rural community college group, the incentive was raised to $40 and was paid to all three participants.

C. Analysis of ASSIST Data

The purpose of this part of the evaluation was to analyze the academic success at ASU, NAU, and UA of Arizona community college transfer students using data from the ASSIST database. In the RFP, initial questions were framed as follows:

1. What are the GPAs and credits and time to degree completion?
2. What are the retention rates?
3. What is the difference in the success between those students who completed an AGEC/transfer degree versus those who did not?
4. What critical data sources need to be developed to most fully assess the effectiveness of AZ transfer system?

We proposed a number of analyses with data from cohorts of students who transferred from Arizona community colleges in 2001, 2002, 2003, 2004, and 2005. We ultimately looked at the outcomes of persistence, time to graduation, GPA, and credits at graduation. The purpose was to see whether and to what extent students who followed the transfer pathways achieved better outcomes at the university, relative to students with other degree configurations or no degree at all. Several other variables—demographics, entry credits, etc.—were included in the analyses as controls. Separately, among only those students with an entry degree or AGEC, we looked at outcome differences by the community college categories of Maricopa, Pima, and Rural. Analyses included the following outcomes:

- 2-yr graduation rates for first 4 cohorts
- 3-yr graduation rates for first 3 cohorts
- 4-yr graduation rates for first 2 cohorts
- 5-yr graduation rates for first cohort

- 1-yr persistence for all cohorts
- 2-yr persistence for first 4 cohorts
- 3-yr persistence for first 3 cohorts

- 1-yr GPA for all cohorts
- 2-yr GPA for first 4 cohorts

- Credits at graduation

- Maricopa/Pima/Rural comparisons for those with entry degrees/certificates

After internal discussions based on initial analyses, we decided that we would not use one and two year university credits as an outcome (as initially proposed), because in essence this would be an attempt to predict full-time/part-time status, and we felt this was more likely a function of individual circumstances (e.g., time and money) than of community college degree status. We did, however, use this variable—more precisely measured as average earned semester credits—as a predictor in all of the other analyses. In addition, as noted above, we looked at credits at graduation as an additional outcome.

The analysis for two-year and three-year retention was modified after it was noted that variables that predicted graduation and one-year persistence—that is, positively influential variables—became negative predictors of two and three year retention, since many successful students would have graduated after two years and thus appear in the dataset as non-persisters. Instead we analyzed two and three year persistence among only those who did not graduate by the prior year.

The independent variables we used (in all analyses unless otherwise noted) include:

- Entry degree configuration (AGEC only, ASSC only, Both, Neither)
- Transfer credits
- Entry semester (Spring/fall)
- Entry year
- Age at entry
- Gender
- Ethnicity (White/non-White)
- University
- FT/PT status (avg. credits earned)

Below we describe the data cleaning and preparation steps, as well as the analytic decisions, that we undertook prior to conducting the statistical analyses, followed by a summary of the statistical models we used to analyze the data.

1. Coding and other analysis decisions

Given the size and complexity of the datasets and the analyses, there were a number of issues that arose during the preparation for analysis that required thought and methodological decisions. A description of the most important of these issues and the decisions that grew from them is provided below.

Data Cleaning

A multi-step data management and cleaning process was necessary to prepare the data for statistical analysis. The first step was to eliminate any duplicate id/year/semester combinations from each of the four cohort files. We then merged these four cohorts and again removed any duplicate cases that had emerged as a result of the combining of the cohorts. Virtually all variables were then recoded from string to numeric format to allow for our subsequent analyses. At this point we needed to restructure the data, so that each student's records were all contained on one row of the file. This required a transposition of the data, where single variables that varied amongst students' multiple records (such as enroll year and semester) would be recreated as multiple variables captured in a single record. Once this transposition process was complete, variables that should have been constant for each student (such as entry age) but which had transposed into multiple variables due to glitches in the data were brought back down to single variables in the dataset. Finally, a number of new variables necessary for analysis were calculated, including capped transfer hours; transfer hour ratios; yes/no versions of variables such as university, AGEC, and Associates degree, etc.

Transfer hours

In an effort to ensure that our analyses were run on students that could meaningfully be considered "AZCC transfer students" we needed to develop a way to define this category of students. While it had initially been suggested to us to cut students out of the dataset based on a specific number of hours of AZCC and non-AZCC transfer credits (i.e., at least 25 and no more than 12), this seemed to miss part of the issue. For example, a student that had 50 AZCC transfer hours could reasonably have 14 non-AZCC transfer hours and still be considered an AZCC transfer student. At the same time, a student with only 10 AZCC transfer hours that had the same 14 non-AZCC hours would seem to belong to a different category. We created a variable that calculated the ratio of AZCC transfer hours to total transfer hours. Working from the client's initial suggestion (of including students with 25 or more AZCC hours and less than 12 hours from all other institutions), we converted those numbers into a ratio and ultimately decided that only students who received at least two-thirds of their transfer credits from an AZCC would be included in our analyses.

Note that the original dataset capped AZCC transfer hours at 64 for ASU students only. We recognized that this would cause problems in the statistical analysis, since it would

appear as though ASU students as a whole had attended fewer community college courses, when in fact the systems for recording credits differed among the universities. Thus for the purposes of analysis we capped AZCC transfer hours at 64 for *all* students in the sample.

GPA

In order to use first and second year GPA as outcomes, a number of decisions had to be made. Some students skip semesters, so we made a decision to use cumulative GPA's for the second and fourth completed semesters, whether consecutive or not, as the outcomes.

FT/PT status

The full time/part time variable varies over time. In order to use it in the outcome analysis as a covariate (or predictor), we calculated it as "average credits per semester," using the earned semester hours variable, after transposition of the dataset. We calculated it for 2, 4, 6, 8, and 10 semesters, depending upon the outcome. For instance, for the one-year GPA analysis, we used the 2-semester variable, whereas for the two-year graduation analysis, we used the 4-semester variable.

AGEC and Associates degrees

In order to compare mutually exclusive categories, we created a set of dummy variables to identify students who had earned an AGEC only, an Associates degree only, students who had earned both degrees, and students who had earned neither. Based on communication with ABOR, the following analytic categories were created:

> AGEC Only
> Any AGEC but no AA/AS/AB
> (May include students with an AGEC and an AAS/AGS)
>
> ASSC Only
> No AGEC but an AAS/AGS/non-AZCC Assc; or an AA/AS/AB earned prior to Fall 2000
>
> BOTH
> Any AGEC and an AA/AS/AB
> No AGEC but an AA/AS/AB earned in Fall 2000 or later (with an embedded AGEC)
>
> NEITHER
> No AGEC or ASSC of any type

Date of AGEC/Associates Completion

After discussions with ABOR, students who are recorded as receiving an AGEC or an Associates degree at any time before transfer or through their first year at the university were counted as having received the AGEC or Associates degree.

University Hours Earned at Graduation
The transfer model is designed to prevent loss of credits, assuming students remain on their initial track, and in theory a student should not have to complete any university hours beyond what is needed to satisfy the 120 hours required for graduation. In reality, about half of the students in the dataset who went on to graduate did so with over 120 credits. At first we thought that the analyses for time to graduation would address this issue, since students who took more credits would likely take longer to graduate. However, a student could take 6 years to graduate with 120 credits or could take 6 years to graduate with 200 credits. Total credits at graduation reflects something about the efficiency with which students make it through their course of study. Therefore we ran a separate analysis only with graduates to determine whether possession of an AGEC or an Associates Degree prior to enrollment promoted economy in course taking while at the university.

Inter-University Transfer Students
Unfortunately, due to time constraints when working with the data, we were not able to pair the records of students who had attended multiple universities across the different cohort datasets. Students attending multiple Arizona universities were excluded from our analyses. We do not feel this should compromise the results of the analyses since ultimately we do not see any conceptual reason why students transferring from one university to another would be substantively different than the rest of the student population.

Early Enrollers
Because the AGEC option was not offered until 1999, students who began their community college studies significantly earlier would not have had the AGEC pathway open to them. To account for this, we limited our analyses to students who enrolled in an AZ CC no earlier than Fall 1997. We chose 1997 because we still found a meaningful number of students – 14% – who entered community college in the Fall of 1997 and went on to receive AGECs. Note that this 14% figure was quite close to the 17.5% of students who entered an AZCC in the fall of 1999 and went on to receive an AGEC.

CIP Codes
While we would hypothesize that entry and graduating CIP Codes might have an impact on some of our outcome variables – such as GPA, for example – we have not yet been able to determine how to include them in analyses effectively. Ideally we would collapse the large number of codes into a smaller number of categories, but in practice it has been difficult to determine how to collapse these codes in a conceptually meaningful way without obscuring relevant differences between them. Thus for this first round of analyses we have not included any CIP code variables in our equations;

we will continue to explore options for working with those variables as analysis proceeds on the full set of student cohorts.

2. Statistical models

Many of the outcomes we studied are dichotomous—i.e., graduation within two years, three years, etc., as well as persistence, while others are continuous—GPA, for example. These two types of outcomes require different statistical models. For continuous variables we used multiple linear regression, while for dichotomous outcomes we used multiple logistic regression, which is appropriate for binary (e.g., Yes/No) events. In both types of analyses we are able to model the outcome while controlling, or adjusting, for other variables such as gender, ethnicity, university, etc., as we look at the key variables of interest—community college degree configuration. While we control for their effects, at the same time we learn whether these variables, or covariates, are significantly associated with the outcomes of interest. For example, we will see in the findings that gender, which we included as a covariate to more accurately estimate the effects of community college degree, is itself a significant predictor of success (females outperform males).

D. Analysis of Arizona Transfer Website

To analyze the Arizona transfer website, http://az.transfer.org/cas, Hezel Associates and our partner, Websults, asked for stakeholder feedback about the site and analyzed the site for content and usability. Questions were included on all five surveys that asked respondents about their use of the site, perceptions of the site, and that asked for suggestions for improvement. In addition to survey questions, APASC provided Hezel Associates and Websults with web analytic data about site usage.

Hezel Associates and Websults also analyzed the transfer website for content and usability, and performed a benchmarking study of other, similar transfer websites. Websults offered their expertise in the design and development of websites to assess the navigability, usability, organization and content of the transfer website, and to identify strengths and areas for improvement.

Other state transfer websites benchmarked as part of this activity include:

- Ohio (http://regents.ohio.gov/transfer/index.php)
- Indiana (http://www.transferin.net/index.html)
- Illinois (http://www.itransfer.org/newwebsite/)
- Kentucky (http://cpe.ky.gov/policies/academicinit/Transfer/)
- Minnesota (http://www.mntransfer.org/index.html)
- Arkansas (http://acts.adhe.edu/aboutacts.aspx)

SURVEY FINDINGS

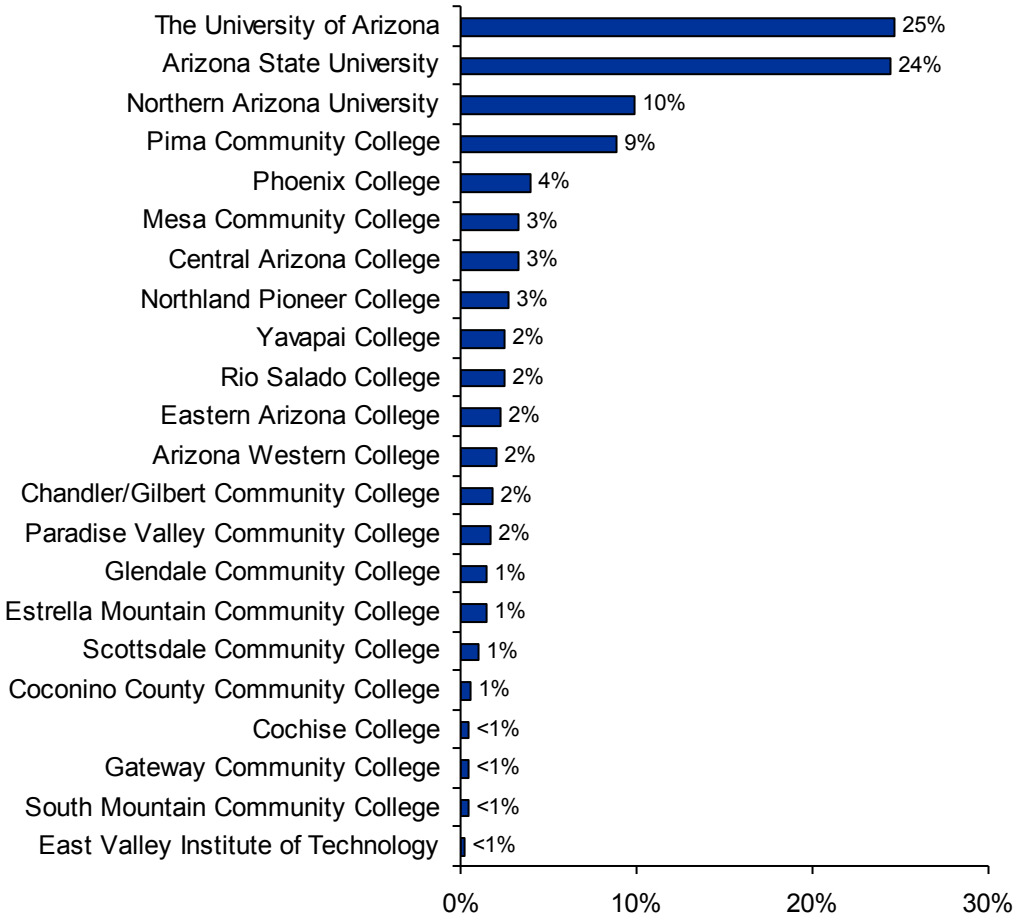
Stakeholder findings are segmented into various themes, including demographics and background data, general findings and perceptions, a section each for the components of the Arizona transfer system, differences between institutions, and the Arizona transfer website. The Arizona transfer website section also includes a usability analysis and a benchmarking activity in addition to stakeholder feedback. The full analyses for each of the surveys and focus groups can be found in the appendix.

A. SURVEY DEMOGRAPHICS AND BACKGROUND DATA

1. Advisor Survey

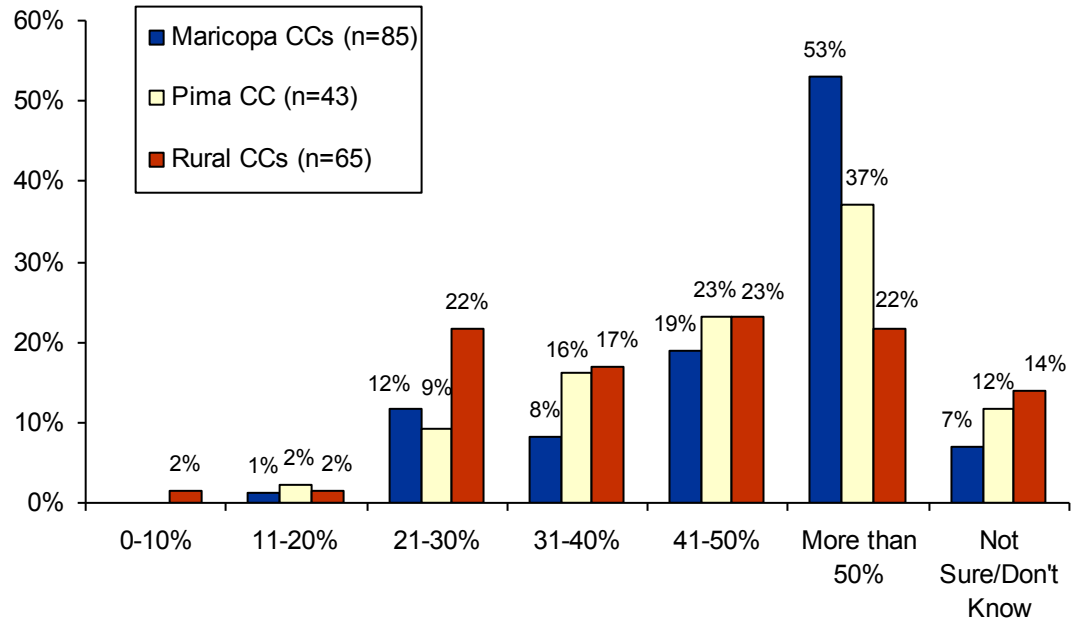
A total of 483 respondents completed the advisor survey, and approximately half were from the University of Arizona or Arizona State University. All community colleges were represented except for Mohave Community College and Diné College, neither of which submitted any advisor names for the survey.

Figure 1. Advisor Survey Question 1. To begin, please indicate at which institution you are currently employed. (n = 483)



Among advisors from community colleges, 39 percent reported that at least half of the students at their institutions intend to transfer to an Arizona public university. Advisors from Maricopa community colleges reported that a high percentage of their students intend to transfer, while those from rural colleges, in particular, indicated a smaller percentage of transfer students at their institutions. Just more than half of community college respondents (56%) reported that their college offers a course to assist/prepare students for the transfer process.

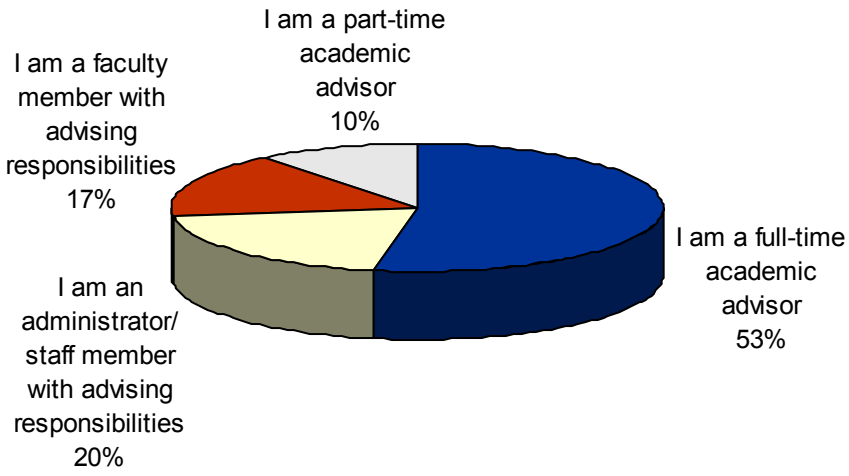
Figure 2. Percent of students at advisors' institution that intend to transfer to a university (Question 24), by Community College (Question 1).



Community college advisors gave a wide range of responses when asked how many students they advised through the transfer process in the 2005-2006 academic year. Seven percent of community college advisors said that they did not advise any students through the transfer process, while 27 percent reported having advised 50 or fewer students through the transfer process. Seventeen percent indicated that they advised between 51 and 250 students through the transfer process, while 28 percent said they advised more than 250 through the process. Of the students they advised and for whom they had knowledge of their transfer success and/or difficulties (i.e. all those except "not sure/don't know" answers), advisors reported that a majority transferred successfully without difficulties. Overall advisors reported that about 90 percent of their students who attempted to transfer during the 2005-2006 academic year did so successfully.

More than half (53%) of the advisors that completed the survey are full-time academic advisors, while ten percent are part-time academic advisors, 20 percent are administrators or staff members with advising responsibilities and 17 percent are faculty members with advising responsibilities. Ten percent of respondents are Transfer Student Ombudspersons.

Figure 3. Advisor Survey Question 38. Which of the following best describes your advising role? (n = 479)



On average, respondents to the advisor survey have been employed in an academic advising role at their institution for nearly eight years. Over the course of their career, respondents have been in an advising role for just more than nine and one-half years.

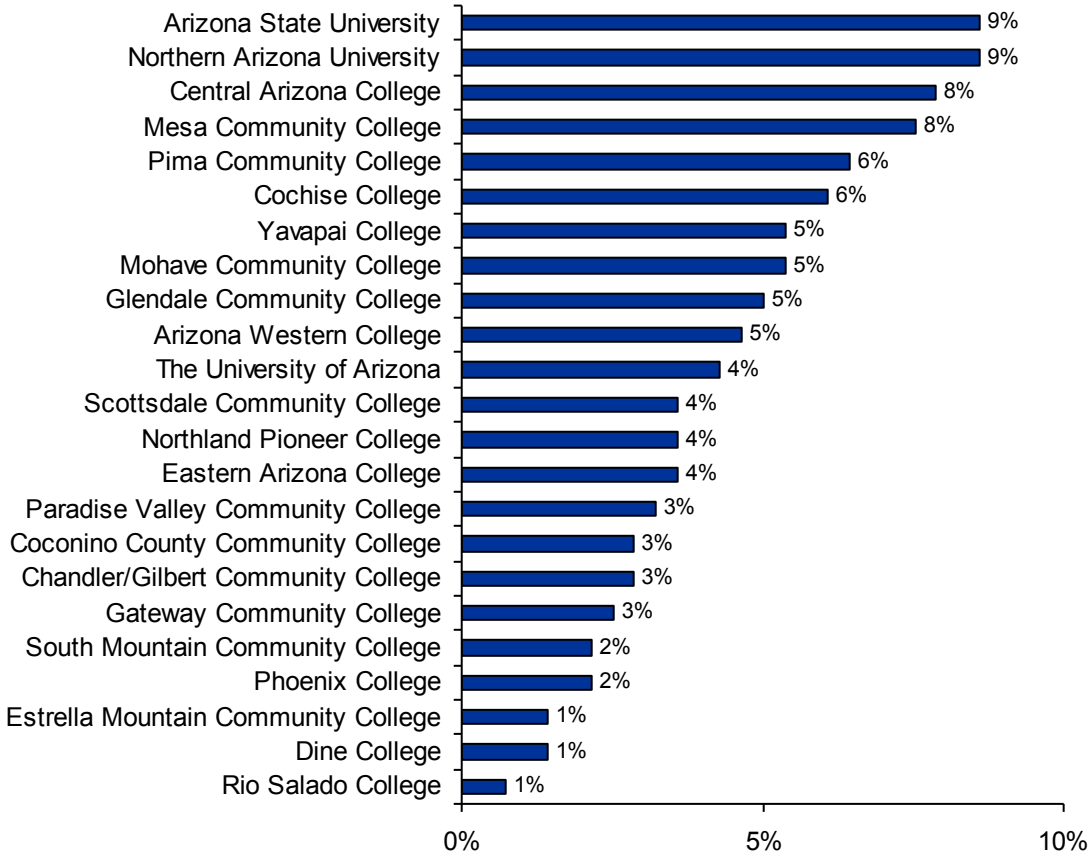
Table 5. Advisor Survey Questions 39 and 40. How long respondents have been employed in an academic advising role at their current institution, and in total over the course of their career.

	Length in Advising Role at Current Institution (n = 466)	Length in Advising Role in Career (n = 456)
Min	0.1	0
Max	40	40
Mean	**7.8**	**9.6**
Median	6	7.75
Mode	7	10

2. ATF Survey

Articulation Task Force (ATF) members from all 20 community colleges and all three universities completed the ATF survey, for a total of 279 respondents. Less than one quarter of all respondents were from the three universities.

Figure 4. ATF Survey Question 1. To begin, please indicate at which institution you are currently employed. (n = 279)



Forty-one ATFs were represented among respondents, led by the Business ATF with 18 members completing the survey. Twelve other ATFs had at least ten members who completed the survey. Each of the 41 ATFs represented in the survey include at least one community college respondent, while nine of the 41 included only community college respondents and no university representatives.

Table 6. Question 37. Please indicate which Articulation Task Force (ATF) you are a member of (n = 279)*

Articulation Task Force	Frequency	Percentage
Business	18	6.5%
Art	15	5.4%
Education	15	5.4%
Computer Science & Computer Information Systems	12	4.3%
Mathematics	12	4.3%
Psychology	12	4.3%
Geology	11	3.9%
Languages	11	3.9%
Theatre Arts	11	3.9%
Administration of Justice Studies	10	3.6%
Communication	10	3.6%
Physics Physical Science & Astronomy	10	3.6%
Sociology	10	3.6%
Allied Health/Health Related Professions	9	3.2%
Anthropology	9	3.2%
English	9	3.2%
Hospitality	8	2.9%
Humanities	8	2.9%
Social Work	8	2.9%
Technology	8	2.9%
Exercise Science Kinesiology Physical Education Health Recreation & Wellness	7	2.5%
Political Science	7	2.5%
Biology	6	2.2%
Chemistry	6	2.2%
Early Childhood Education	6	2.2%
Engineering	6	2.2%
Family & Consumer Sciences	6	2.2%
Geography	6	2.2%
History	6	2.2%
Journalism and Media Arts	6	2.2%
Music	6	2.2%
Academic Advising	5	1.8%
Economics	5	1.8%
Nursing	5	1.8%
Agriculture	4	1.4%
Philosophy	4	1.4%
Religious Studies	4	1.4%
Parks & Recreation Tourism & Non-Profit Management	3	1.1%
Interior Design	2	0.7%
Women's Studies	1	0.4%

*respondents were asked to check all that apply

The average length of time that respondents reported having served as a member of their ATF is just over nine years, with a median of eight years. The average respondent

has spent more than 13 years as a member of the faculty at their institution, and has spent more than 18 years as a faculty member over the course of their career.

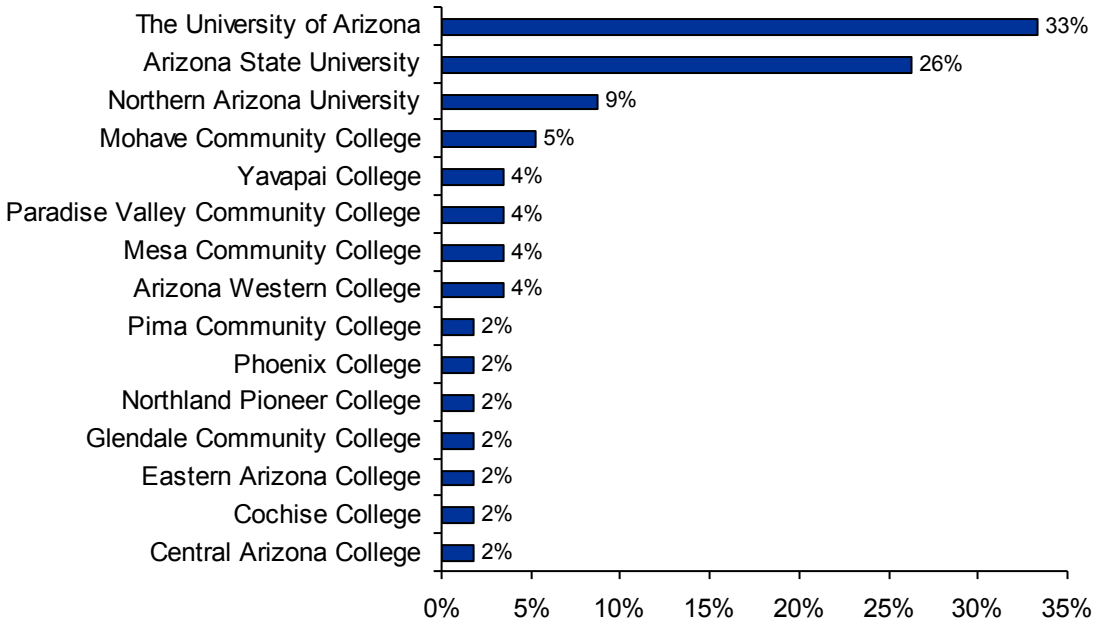
Table 7. ATF Survey Questions 38, 39 and 40. Length of time as an ATF member, as a faculty member at respondents' current institution, and in total as a faculty member over the course of the respondents' career.

	Length of Time as Member of ATF (n = 252)	Length as Faculty Member at Current Institution (n = 261)	Length As Faculty Member in Career (n = 258)
Min	0.5	0	0
Max	30	38	40
Mean	**9.1**	**13.5**	**18.3**
Median	**8**	**12**	**17**
Mode	6	7	20

3. Admissions and Registrar Survey

Fifty-seven individuals working in admissions and/or registrar roles completed the admissions and registrar survey. One-third (33%) were from the University of Arizona, and two-thirds overall were from one of the three universities. Twelve of the 20 community colleges had at least one representative who completed the survey.

Figure 5. Admissions and Registrar Survey Question 1. To begin, please indicate at which institution you are currently employed. (n = 57)



The most common functions performed by survey respondents are transcript evaluation (40%), graduation services (23%), administration in a registrar office (23%), and records management (21%).

Table 8. Admissions and Registrar Survey Question 33. Please identify your primary admissions and registrar functions from the list below. You may check up to two functions, but please do not check more than two. If you perform more than two of the functions, please check the two that represent your primary functions. (n = 57)

Primary Functions	Frequency	Percentage
Transcript evaluator	23	40.4%
Graduation Services	13	22.8%
Registrar administrator (Registrar Associate or Assistant Registrar)	13	22.8%
Records Managements	12	21.1%
Admissions Counselor	7	12.3%
Admissions Administrator (Director Associate or Assistant Director)	7	12.3%
Data Entry	5	8.8%
Recruiter	4	7.0%
Encoder	2	3.5%
Admin Asst/Supervisor Admissions Call Center	1	1.8%
Advising rep. to the A & R ATF	1	1.8%
Credentials Evaluator	1	1.8%
Grad D-base manager	1	1.8%
International Student Admissions Advisor	1	1.8%
Processing Supervisor	1	1.8%
University Curriculum	1	1.8%
Veteran Services	1	1.8%
Other	8	14.0%

On average, respondents have been employed in an admissions or registrar role at their current institution for nearly eight years, and have been in such roles for nearly ten years over the course of their careers.

Table 9. Admissions and Registrar Survey Questions 34 and 35. How long respondents have been employed in an admissions or registrar role at their current institution, and in total over the course of their career.

	Length in A&R Role at Current Institution (n = 39)	Length in A&R Role in Career (n = 37)
Min	0.5	1
Max	25	25
Mean	**7.9**	**9.9**
Median	5	10
Mode	10	6, 10

4. University Student Survey

A total of 713 students completed the university student survey, and 79 percent of survey respondents indicating that they are currently attending an Arizona public university. Among the others, ten percent are enrolled at both an Arizona university and a community college, nine percent have graduated from an Arizona public university and two percent are not currently attending one of the three universities but have not graduated.

Among those students that are currently attending an Arizona public university (including those who are also attending a community college), 74 percent are attending ASU, with 14 percent attending NAU and 12 percent the University of Arizona. The distribution of respondents who have already graduated does not lean so heavily toward ASU, with 54 percent having graduated from ASU and 25 and 21 percent from NAU and UA, respectively. Of the 16 students that completed the survey but are not currently enrolled and have not graduated, nine were last enrolled at ASU, while three were at NAU, two were at UA and two were never enrolled at one of the Arizona public universities. All 16 were at least "somewhat likely" to re-enroll at an Arizona public university in the future.

Figure 6. University Student Survey Question 2. Which of the following best describes your current enrollment status? (n = 713)

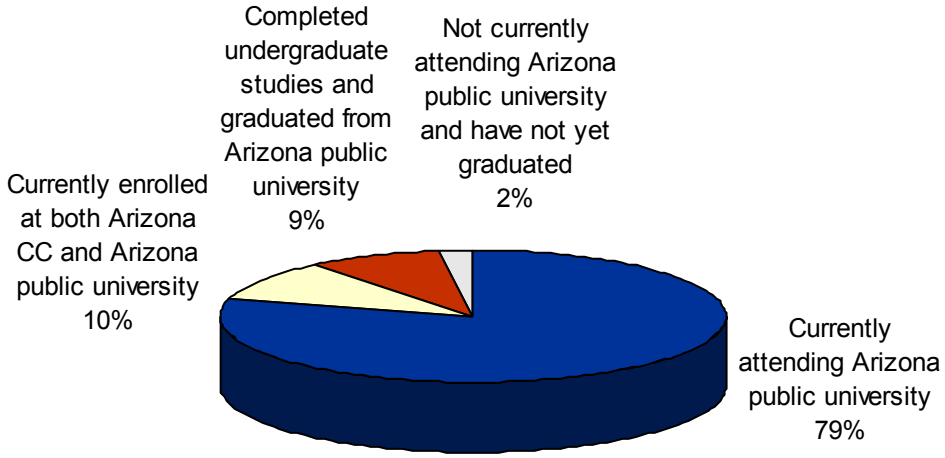
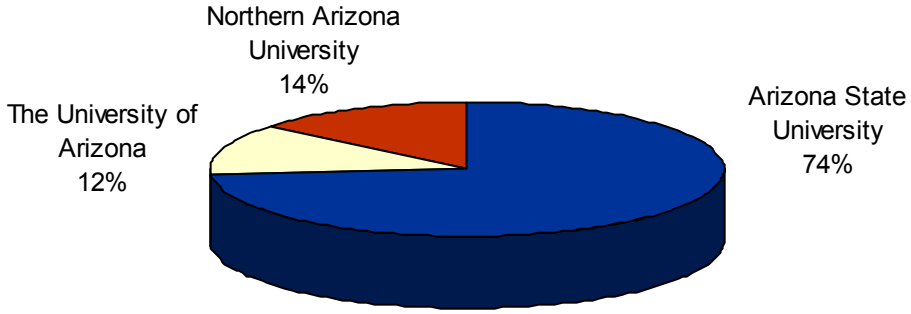


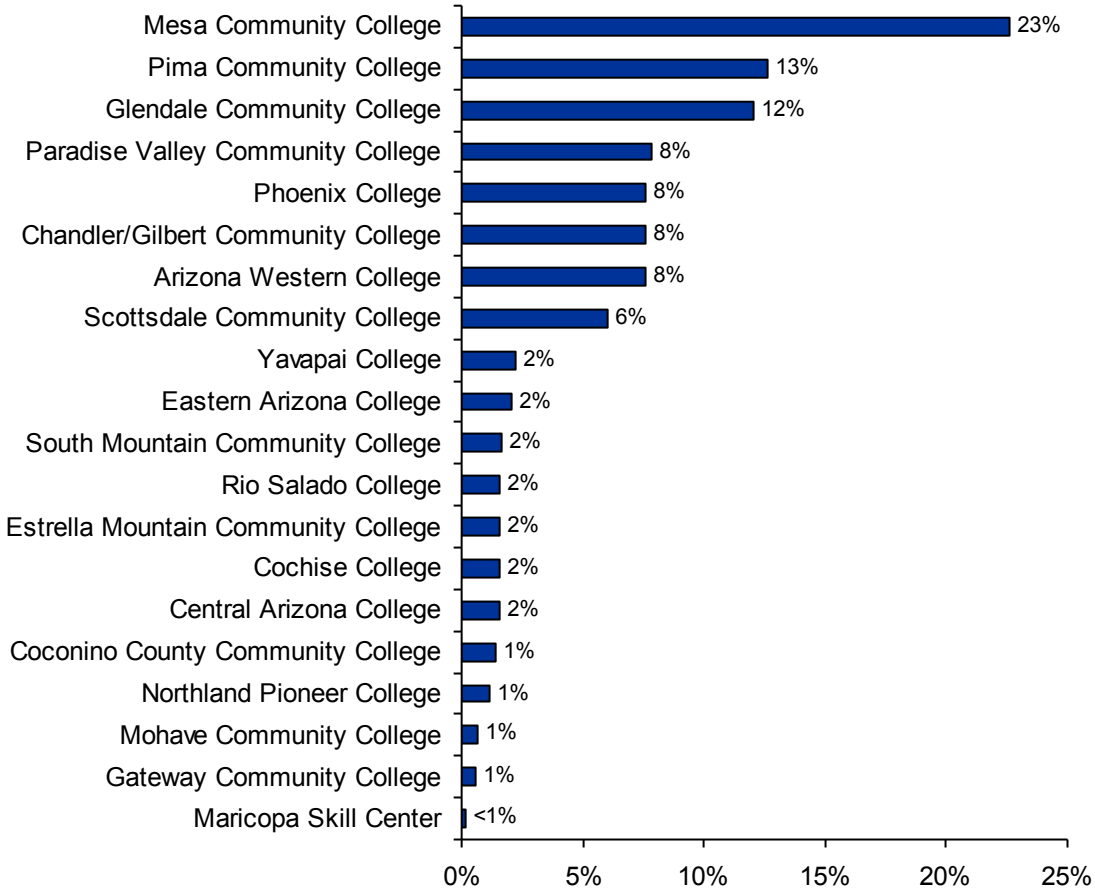
Figure 7. University Student Survey Question 3. Which Arizona public university are you currently attending? (n = 636)



*44 ASU responses could not be verified

Mesa Community College (23%), Pima Community College (13%) and Glendale Community College (12%) are the three community colleges that respondents most often indicated that they transferred from. Fifty-nine percent of respondents transferred from one of the Maricopa Community Colleges, and 28 percent transferred from one of the rural colleges.

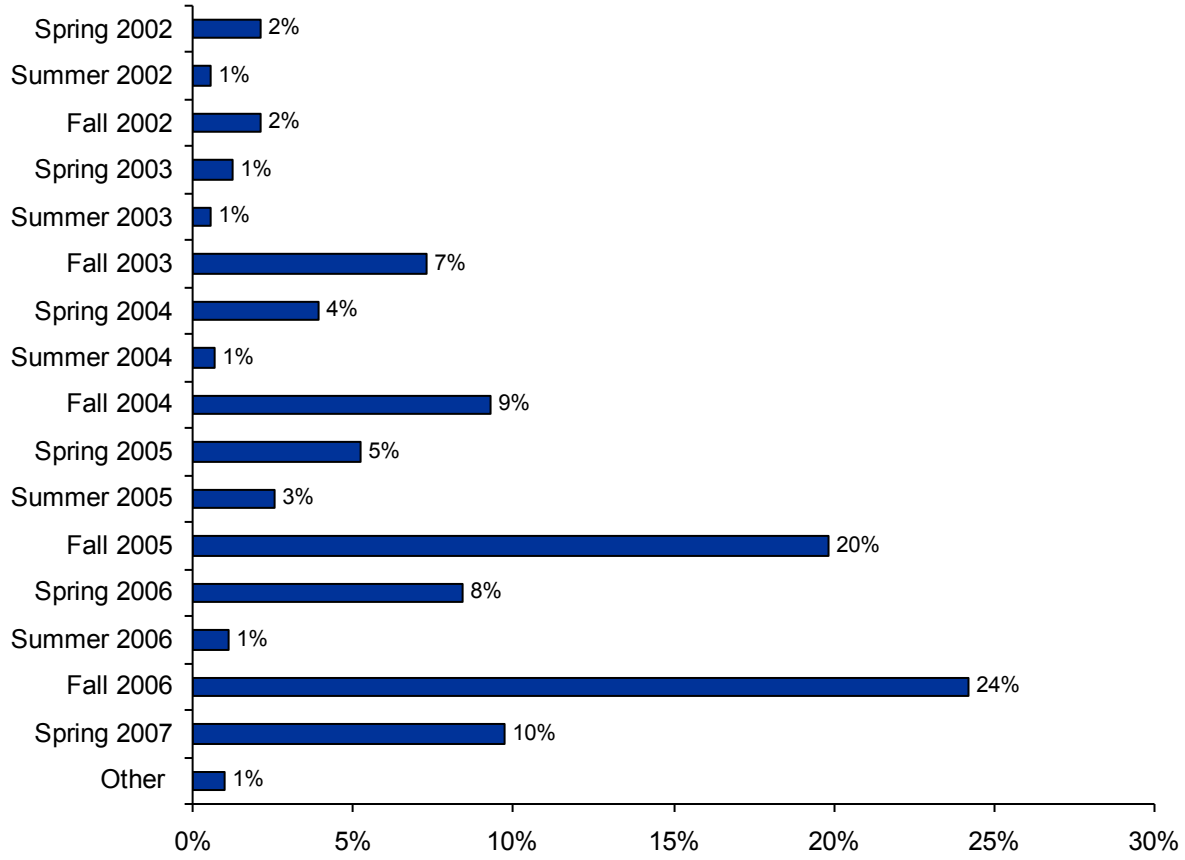
Figure 8. Question 10. Which Arizona community college did you transfer from? (if you attended more than one community college, please choose the last community college you attended before transferring) (n = 713)



*14 respondents who chose "Arizona Western College" as their transfer school were included but could not be verified

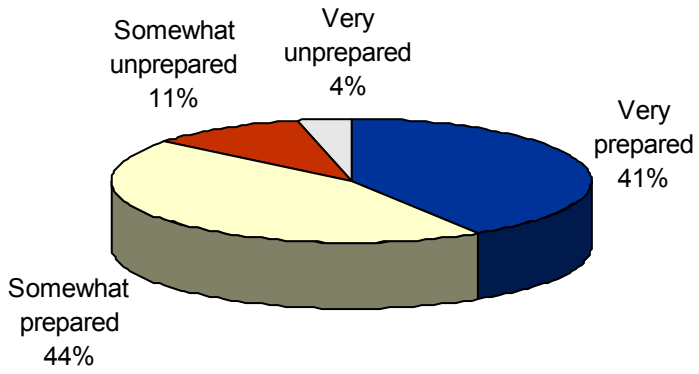
More than one-third (34%) of university student respondents transferred from their community college during the 2006-2007 academic year. After Fall 2006, in which 24 percent of respondents transferred, Fall 2005 was the next most common semester in which students first enrolled at their university. Fall semesters, which account for 62 percent of all respondents, are most frequently the semesters in which students transfer, while spring semesters are second and summer semesters third. Respondents that transferred from one of the Maricopa community colleges were more likely to have done so in the 2006-2007 academic year than students from other colleges, while students from Pima or one of the rural colleges were more likely to have transferred during the 2005-2006 academic year than students from Maricopa.

Figure 9. University Student Survey Question 11. Which semester did you transfer from your community college to your university (the first semester you enrolled at the university as a transfer student)? (n = 710)



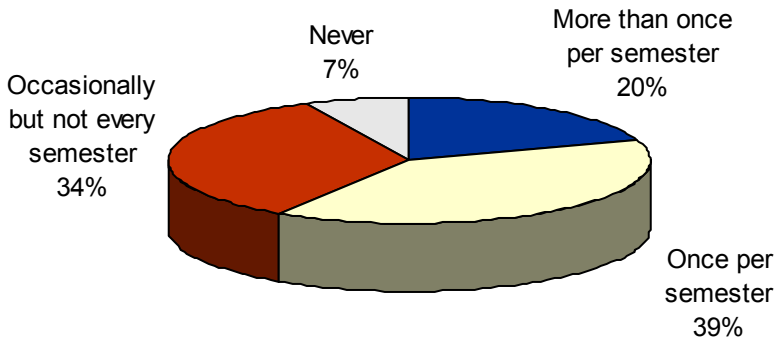
Forty-one percent of respondents indicated that they felt "very prepared" for university studies when they transferred from their community college. An additional 44 percent reported that they felt "somewhat prepared," and 15 percent indicated some level of unpreparedness. There were very minor differences in the reported level of preparedness based on which community college the student transferred from, but students at NAU were most likely to feel at least "somewhat prepared" while students at ASU were most likely to indicate feeling unprepared. There were also only very minor differences in reported level of preparedness based on how often the student met with an academic advisor prior to transferring.

Figure 10. University Student Survey Question 12. How prepared did you feel for university studies after transferring from your community college? (n = 711)



Fifty-nine percent of respondents reported that they met with an academic advisor at least once per semester while enrolled at their community college. Only seven percent of respondents indicated that they never did so. Students that transferred from one of the rural community colleges were more likely than other respondents to report having met with an academic advisor more than once per semester, but were also most likely to report never having done so. Students at UA were also far more likely than their ASU and NAU peers to report having met with an advisor more than once per semester, but the percentages of students who met with their academic advisor at least once per semester were very similar across the three universities. White students indicated having met with their academic advisor less frequently than did minority students.

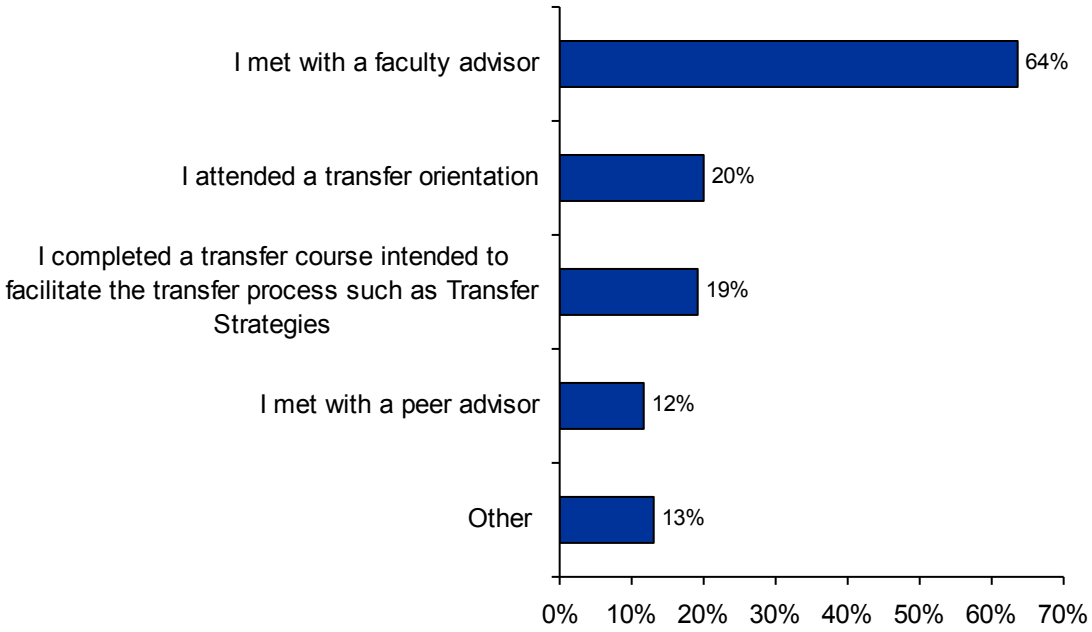
Figure 11. University Student Survey Question 14. About how often did you meet with an academic advisor while enrolled at your community college? (n = 713)



The most common activity other than meeting with an academic advisor that respondents engaged in to plan for transfer was meeting with a faculty advisor, as 64 percent of students that engaged in additional planning activities did so. Smaller percentages of students attended a transfer orientation (20%) and/or completed a

transfer preparation course (19%). Thirty-five students that indicated "other" activities researched the transfer process online using online resources and the transfer guide. It should be noted that 29 percent of survey respondents either did not select any additional activities or said that they engaged in none.

Figure 12. University Student Survey Question 15. Excluding meeting with an academic advisor, what other types of planning activities did you engage in while enrolled at your community college? (check all that apply) (n = 506)*



*Respondents were asked to check all that apply
**207 survey respondents did not respond to Question 15 or answered they had no activities planned

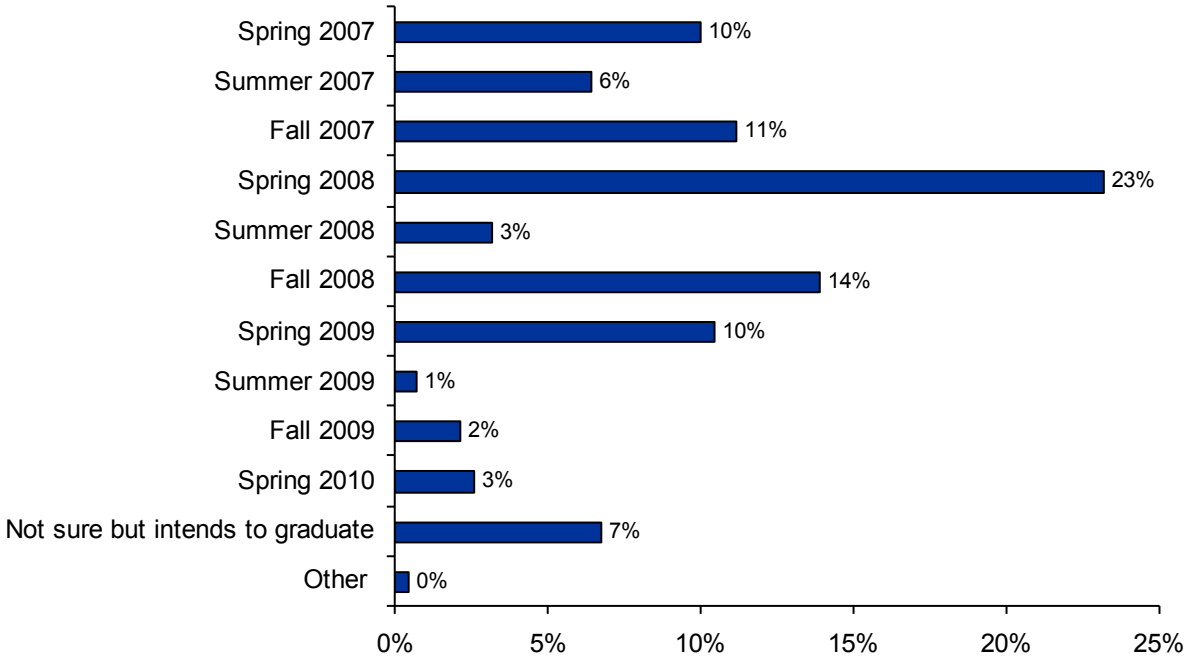
Students currently attending Arizona State University were most likely to have transferred from one of the Maricopa community colleges. Students attending the University of Arizona were most likely to have transferred from Pima, while students transferring from one of the rural community colleges transferred to the three universities in nearly equal numbers.

Table 10. Arizona public university currently attending (Question 3), by Arizona community college transferred from (Question 10).

Response	College Transferred From		
	Maricopa CCs (n = 450)	Pima CC (n = 74)	Rural CCs (n = 100)
Arizona State University	91.1%	18.9%	35.0%
Northern Arizona University	5.6%	16.2%	39.0%
The University of Arizona	3.3%	64.9%	26.0%

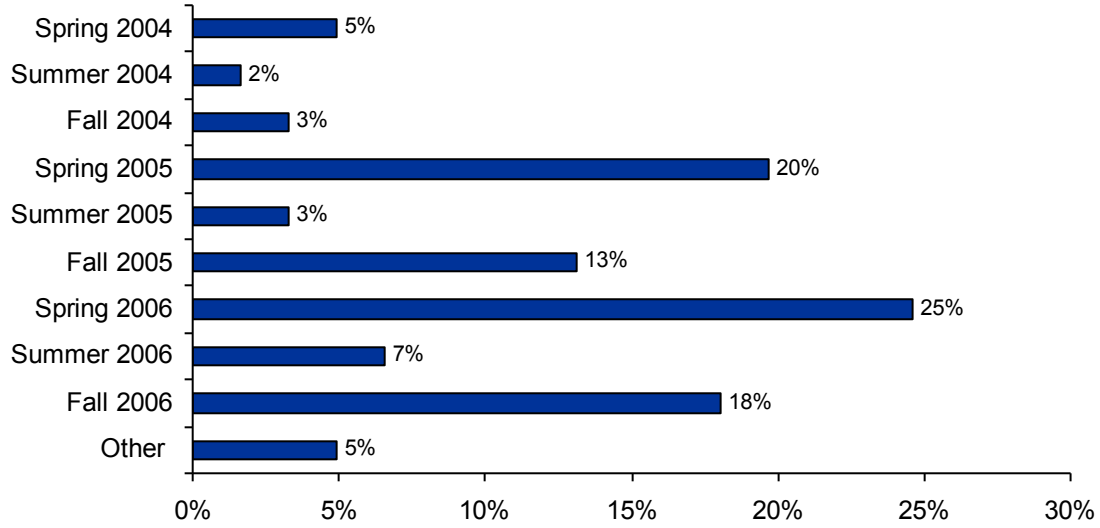
Ten percent of students currently enrolled at one of the three universities expect to graduate in the Spring 2007 semester, while half expect to graduate by the end of Spring 2008 semester. Seven percent intend to graduate, but are unsure when they will do so.

Figure 13. University Student Survey Question 4. When do you expect to graduate from your current university (the semester in which you will complete all graduation requirements)? (n = 635)



Among respondents that have graduated from their university, half did so in 2006, with Spring 2006 semester being the most common semester of graduation at 25 percent. An additional 20 percent graduated in the Spring 2005 semester, and the Spring 2003 semester was the oldest semester of graduation reported by a respondent.

Figure 14. University Student Survey Question 9. Which semester did you graduate from your university? (n = 61)



More than two-thirds (69%) of respondents are white, and 17 percent are Hispanic. Females accounted for the majority of respondents – 58 percent – and the average student age is just under 27 years old. The median and mode ages are much lower, however, at 24 and 21 years old, respectively.

Figure 15. University Student Survey Question 43. What is your race/ethnicity? (n = 679)

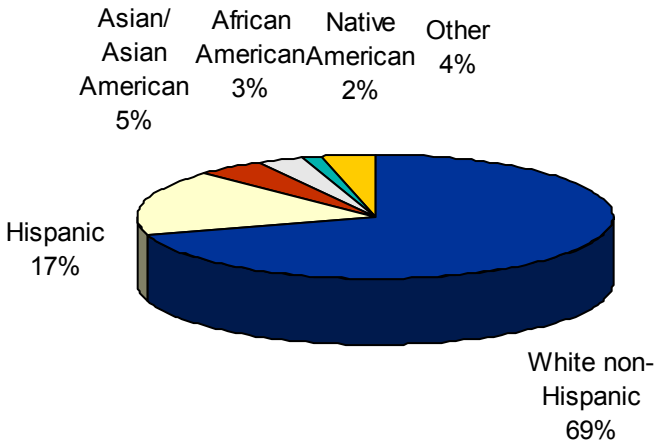


Figure 16. University Student Survey Question 44. What is your gender? (n = 708)

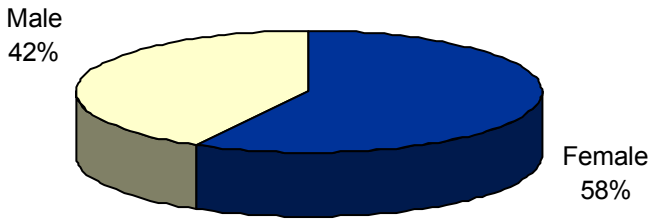


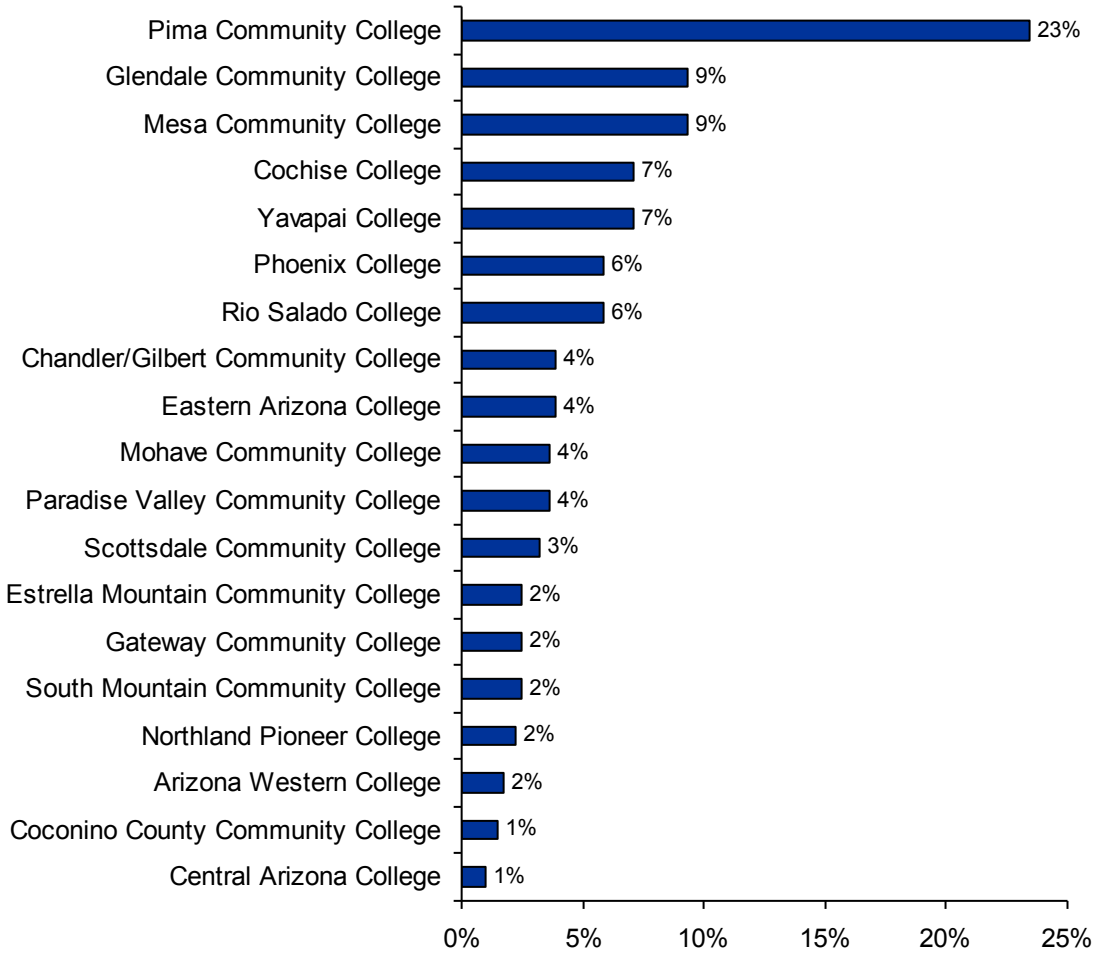
Table 11. University Student Survey Question 45. What is your age (in years)? (n = 696)

	Age
Min	18
Max	62
Mean	26.9
Median	24
Mode	21

5. Community College Student Survey

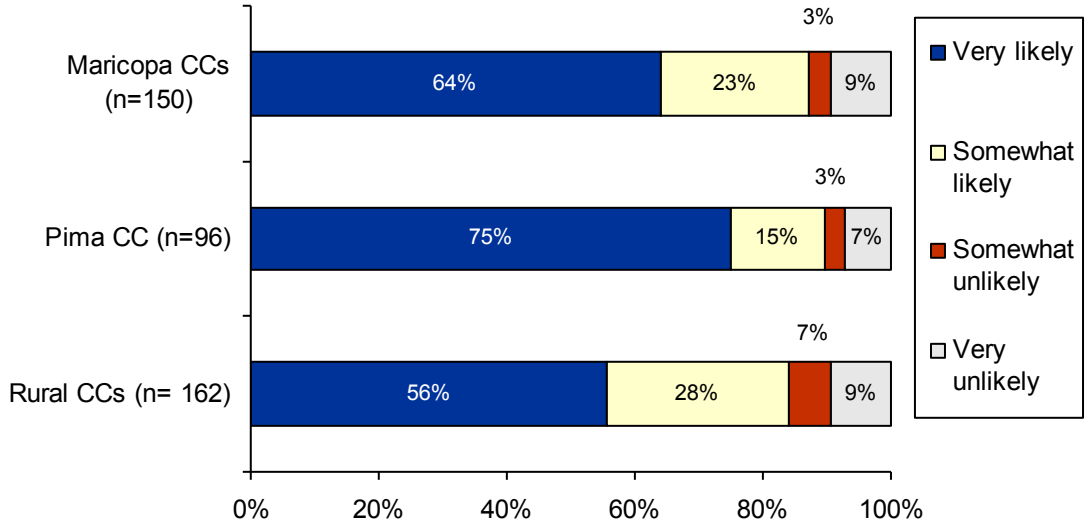
Of the 427 community college students that completed the community college student survey, 96 percent are currently enrolled at an Arizona community college. Of those that are currently enrolled, 23 percent are attending Pima Community College, the largest percentage of any single college. Not quite half (48%) of respondents indicated that they are attending one of the Maricopa community colleges, and all of the rural colleges were represented except Dine College, which was not included in the survey. Eighteen individuals that completed the survey are not currently attending an Arizona community college, and ten of the 18 indicated that they are attending another college or university. Ten of the 18 indicated that they are at least somewhat likely to re-enroll at an Arizona community college in the future, however.

Figure 17. CC Student Survey Question 3. Which Arizona community college are you currently attending? (n = 409)



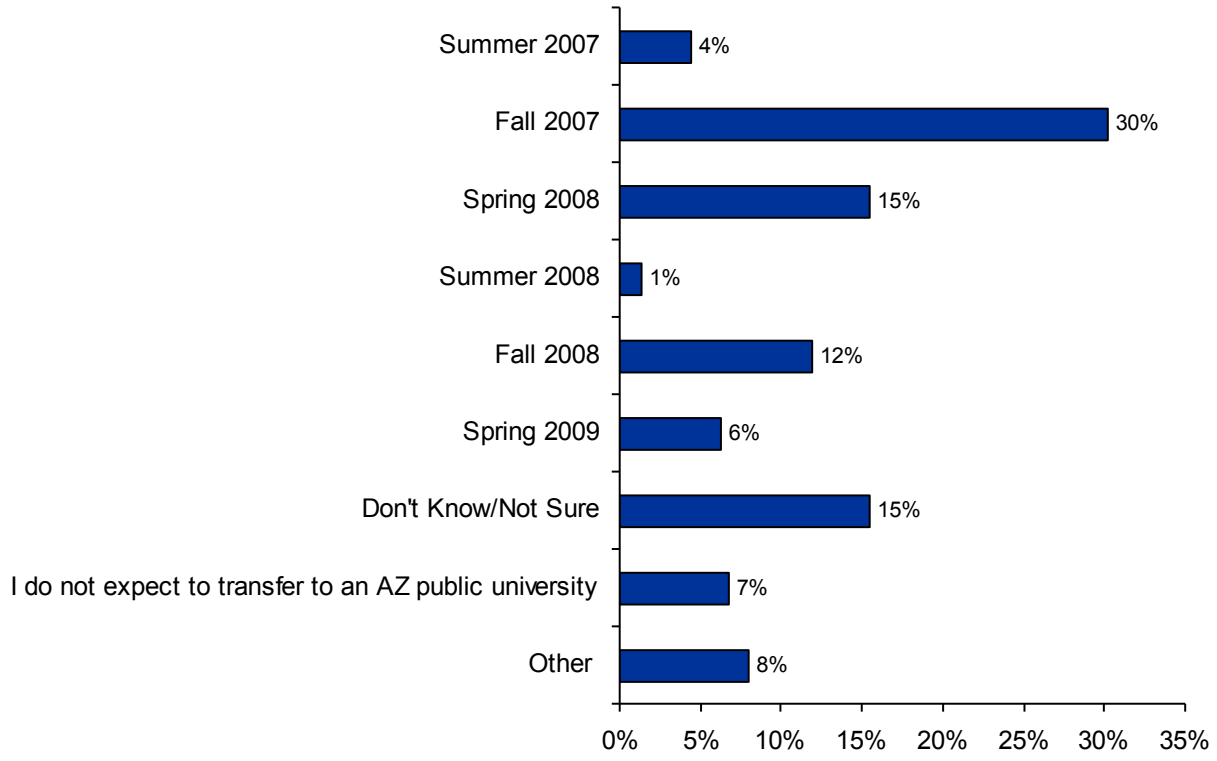
Eighty-six percent of respondents indicated that they are at least "somewhat likely" to transfer to an Arizona public university, while five percent were "somewhat unlikely" and nine percent "very unlikely." Students that are attending one of the rural colleges were least likely to report that they will transfer to an Arizona public university, while students at Pima Community College were the most likely to intend to transfer. Furthermore, the more often a student reported meeting with an academic advisor, the more likely they are to intend to transfer.

Figure 18. How likely respondent is to transfer to an Arizona public university (Question 7), by which Arizona college respondent is currently attending (Question 3).



Half of respondents expect to transfer to a university by Summer 2008 semester, and 30 percent expect to do so in the Fall 2007 semester. Fifteen percent were not sure when they will transfer to one of the three public universities. Nineteen of the 33 "other" responses said that they have already transferred.

Figure 19. CC Student Survey Question 8. Which semester do you expect to transfer to an Arizona public university (the first semester you will enroll at the university as a transfer student)? (n = 427)



Arizona State University is the most popular transfer destination among respondents, as 35 percent anticipate that they will transfer to ASU. Twenty-seven percent of respondents said that they plan to transfer to the University of Arizona, while 17 percent expect to go to Northern Arizona University and 12 percent were unsure which university they will transfer to. Maricopa students were by far the most likely to intend to transfer to ASU, while Pima students were likewise the most likely to anticipate transferring to UA. Students at one of the rural community colleges were more than twice as likely to be unsure of their transfer destination as students at Pima or one of the Maricopa colleges.

Table 12. Arizona public university that respondent plans to transfer to (Question 9), by which Arizona college respondent is currently attending (Question 3).

Institution Respondent Expects to Transfer to	College Currently Attending		
	Maricopa CCs (n=151)	Pima CC (n=96)	Rural CCs (n=160)
Arizona State University	72.2%	4.2%	16.9%
Northern Arizona University	6.0%	8.3%	33.8%
The University of Arizona	3.3%	76.0%	16.9%
I do not expect to transfer to an Arizona public university	9.9%	6.3%	12.5%
Don't Know/Not Sure	8.6%	5.2%	20.0%

Eighty-nine percent of respondents reported that they meet with an academic advisor at least occasionally, but only 53 percent do so at least once per semester. Students attending one of the rural community colleges meet with an academic advisor most frequently (56% at least once per semester), while students at a Maricopa community college were least likely to do so more than once per semester (13%), and most likely to never to do so (13%). While differences between the community colleges students are currently attending are small, they are more pronounced by university that students intend to transfer to. Students that expect to go to NAU visit with an academic advisor most frequently (65% at least once per semester), while students that do not expect to transfer to an Arizona public university do so least often. Students that do not know the university they will transfer to reported visiting with an academic advisor less often than those who know where they will transfer. Non-white students were also more likely to meet with an academic advisor both more than once per semester and once per semester than were white students.

Figure 20. CC Student Survey Question 10. About how often do you meet with an academic advisor at your community college? (n = 427)

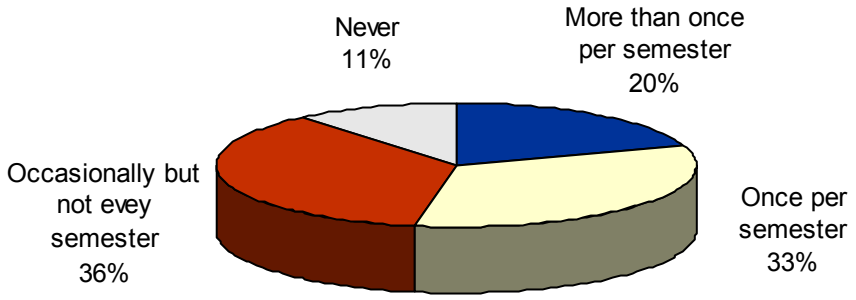
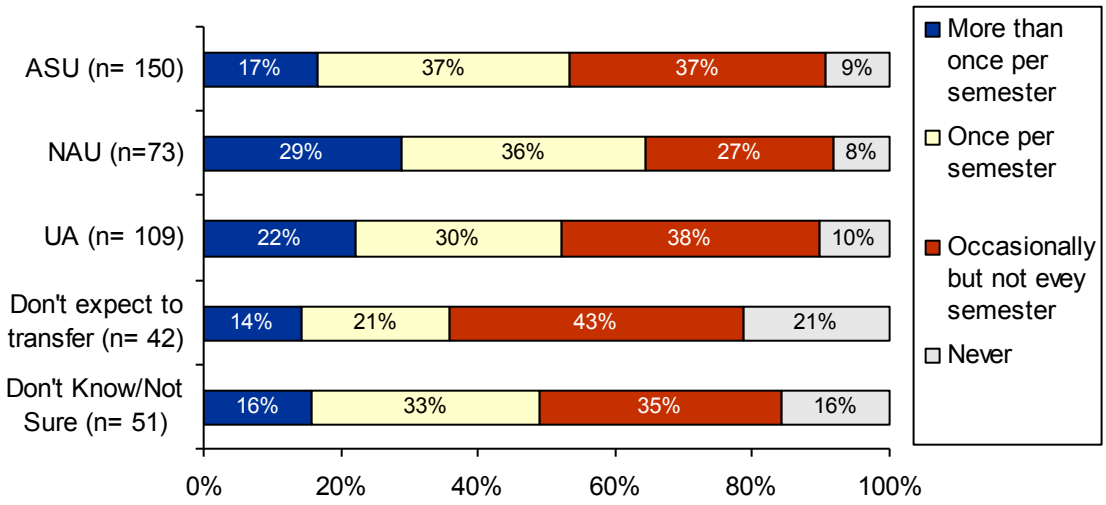
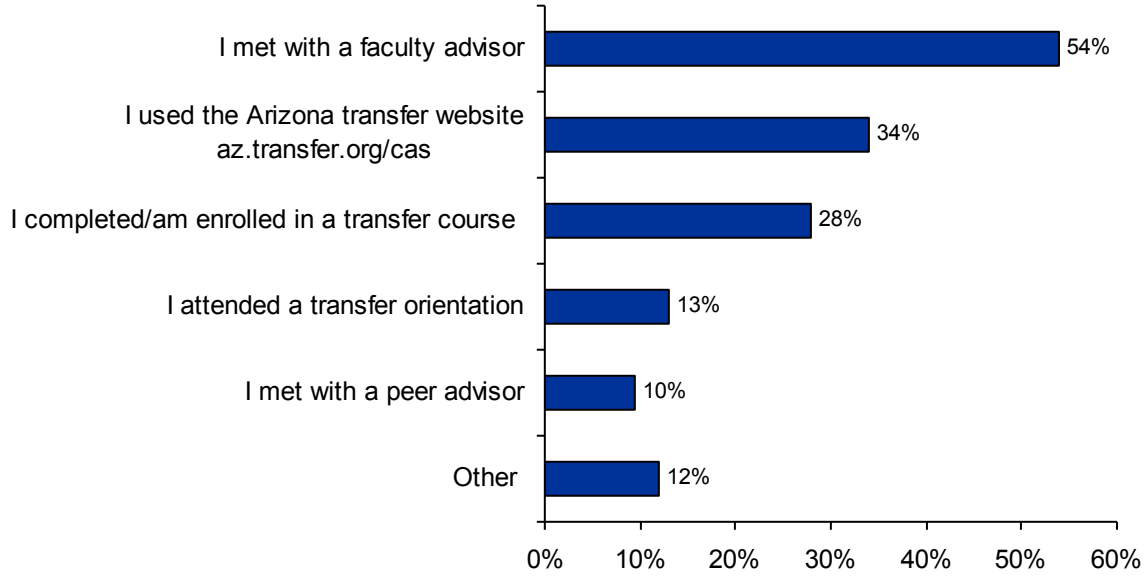


Figure 21. How often respondent met with academic advisor at community college (Question 10), by which Arizona university respondent expects to transfer to (Question 9).



Students were also asked what other activities they were engaged in to plan for transferring. Twenty-two percent of respondents either did not select any activities or said that they were not engaging in other activities. Among those that did engage in additional activities, the most common was meeting with a faculty advisor (54%), followed by using the Arizona transfer website (34%), and taking a transfer preparation course (28%).

Figure 22. CC Student Survey Question 11. Excluding meeting with an academic advisor, what other types of planning activities you have engaged/are currently engaged in?* (n = 333)**



*Respondents were asked to check all that apply
**94 survey respondents did not respond to Question 11 or answered they had no activities planned

Respondents to the community college student survey were more likely to be minority and female as compared to respondents to the university student survey. Sixty-three percent are white, while nearly one-quarter (24%) are Hispanic. More than two-thirds (69%) of respondents are female. The average student age of respondents is nearly 27 years, while the median is 24 and the mode 20.

Figure 23. CC Student Survey Question 39. What is your race/ethnicity? (n= 418)

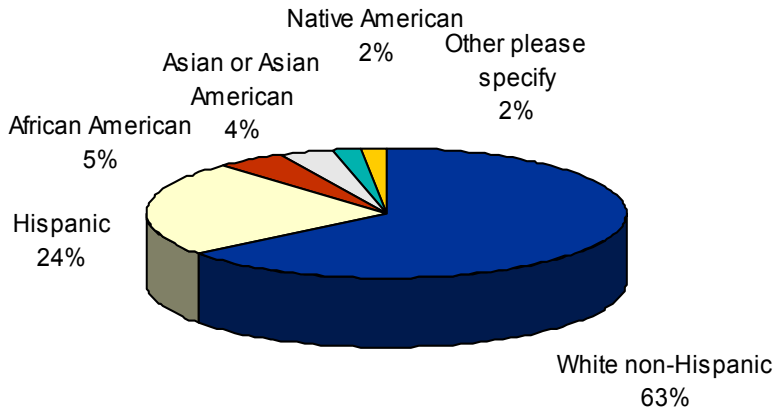


Figure 24. CC Student Survey Question 40. What is your gender? (n= 420)

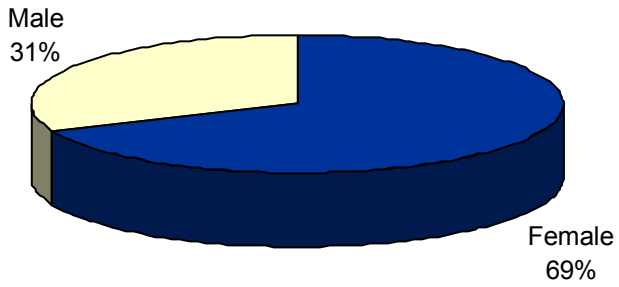


Table 13. CC Student Survey Question 41. What is your age (in years)? (n= 417)

	Age
Min	17
Max	64
Mean	26.94
Median	24
Mode	20

B. General Findings and Perceptions

Satisfaction with the Arizona transfer system was generally quite high among the various groups of stakeholders, with the portion of respondents who are at least

"somewhat satisfied" ranging from 84 to 93 percent. The student surveys had the highest percentages of dissatisfied respondents, and community college students, in particular, were the least satisfied of all the groups surveyed. Not only did community college students have the highest percentage of dissatisfied respondents (16%), but the percent of "very satisfied" respondents was also the lowest of all the groups at just 21 percent.

Satisfaction among advisors and ATF members with the system as a whole varied only slightly by institution, and only two differences are noteworthy. University advisors from NAU were more satisfied with the system than their counterparts at ASU and UA. Advisors from the Maricopa community colleges indicated lower overall satisfaction than those from the other community colleges, and those from the rural colleges had the highest overall satisfaction.

Among university students, those who have already graduated had the highest levels of satisfaction with the transfer experience as a whole, while dual enrolled students were the most likely to be dissatisfied. Further, the more prepared for university studies a student reported feeling, the more likely they were to be satisfied with the transfer experience. Students that transferred from one of the Maricopa community colleges were slightly more likely than other students to feel dissatisfied with the experience as a whole. There were only minimal differences, however, among university students based on the university they are attending or graduated from or how often they met with an academic advisor before transferring.

Community college students attending one of the rural community colleges and those who plan to transfer to NAU were the least likely to be dissatisfied with the transfer experience as a whole, while Maricopa students and students intending to transfer to ASU were most likely to be dissatisfied. Female and traditionally aged community college students were also slightly more satisfied with the transfer experience as a whole than were males and adult students.

Figure 25. Level of satisfaction with the Arizona transfer system/experience as a whole, by group surveyed.

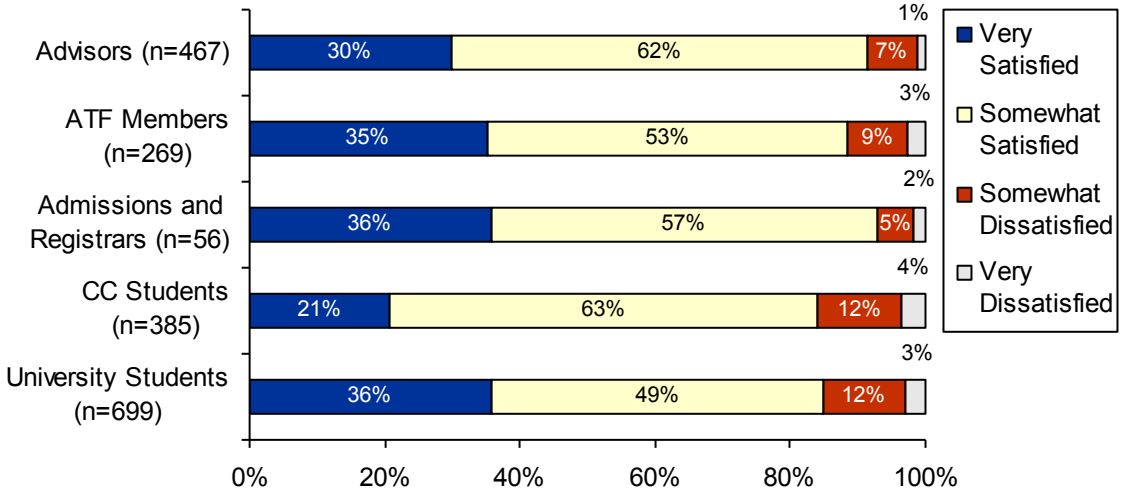
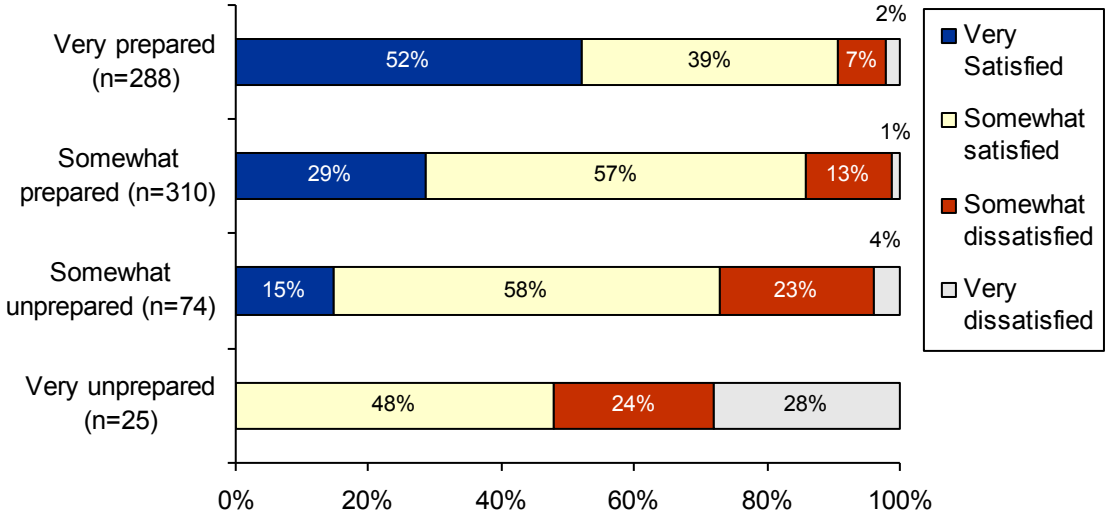


Figure 26. University student satisfaction with transfer experience as a whole (Question 38), by level of preparedness for university studies after transferring from community college (Question 12).



Moderate majorities of advisors (69%), community college (63%) and university students (75%) felt that sufficient information is available to students regarding the transfer process. Students were also asked about the amount of information available to them regarding each of the three primary components (AGEC, Transfer Pathway degrees and common courses) of the Arizona transfer system, but responses were very similar to the amount of information available regarding the process as a whole, with little variation. The only sizeable variation was from university students regarding the AGEC, as only 63 percent felt that sufficient information was available to them. It

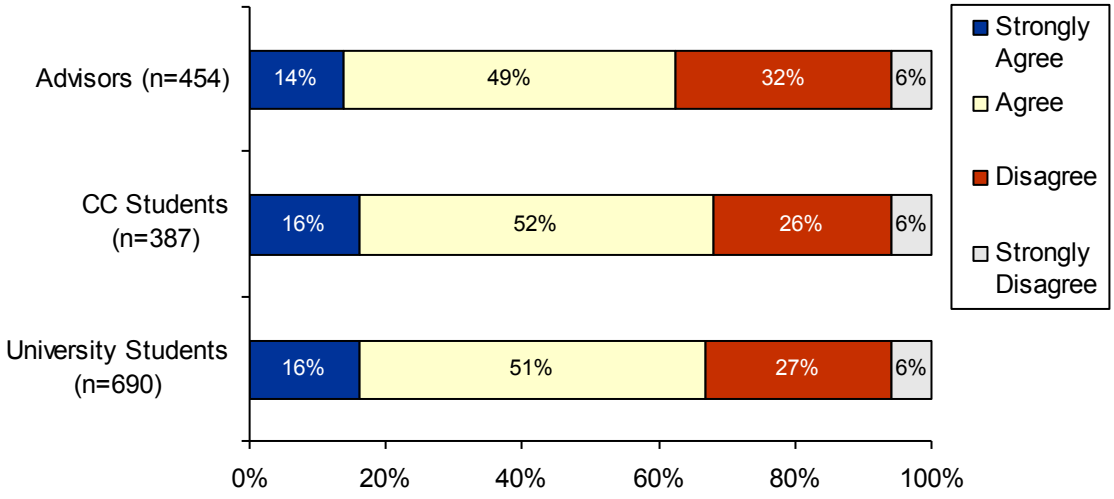
should be noted that community college respondents were allowed to select "not sure," while university students and advisors were not. The presence of "not sure" responses likely accounts for at least a significant portion of the lower levels of agreement amongst community college students as compared to their university peers.

Among university students, higher frequency of meeting with an academic advisor at the community college was associated with greater agreement that sufficient information was available regarding all the components and the transfer system as a whole. Regarding the AGEC, students that transferred from a Maricopa college were more than twice as likely to feel that sufficient information was not available as students from Pima or the rural colleges. There were only minimal differences regarding sufficient information about transfer pathway degrees between the community colleges students had transferred from, but students that transferred to ASU were much more likely to disagree that sufficient information was available, while students at UA disagreed least often.

Students at Pima Community College were more likely to agree that sufficient information regarding all the components of the transfer system and the system as a whole was available to them than their peers at other community colleges. Among community college advisors, those from rural colleges were more likely to disagree that sufficient information is available to students than their colleagues from the urban districts.

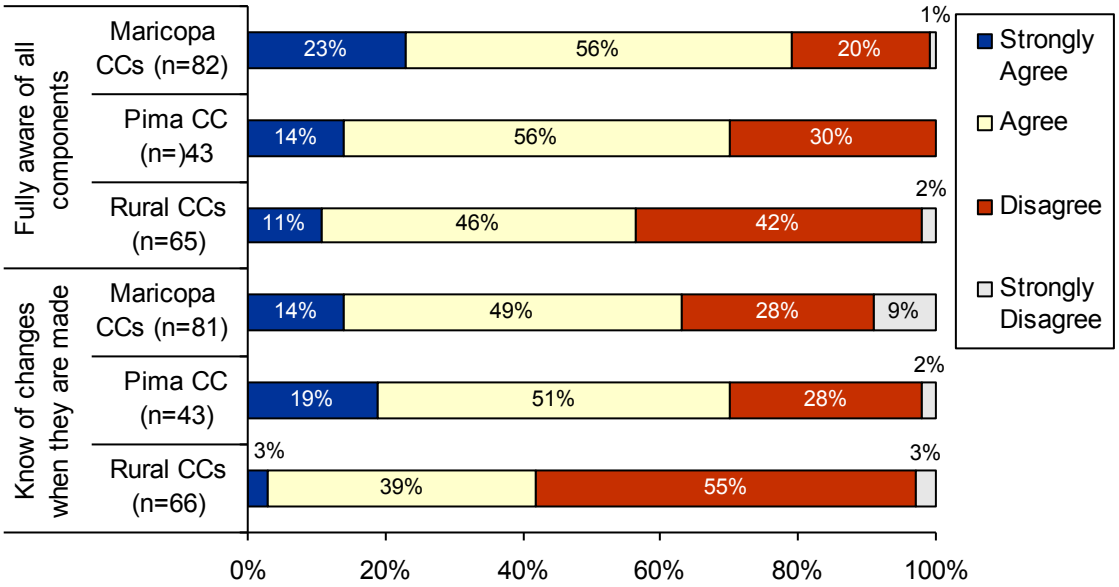
All three groups also had similar levels of agreement when asked if students have adequate opportunities to discuss issues related to transfer and articulation during pre-enrollment and/or orientation sessions. Advisors disagreed with greater frequency than students, and advisors from NAU and the rural community colleges disagreed most often. Community college students from Pima Community College agreed most often, while those who plan to transfer to ASU were much more likely to disagree than students who plan to transfer to NAU or UA.

Figure 27. Extent to which respondents agree that during pre-enrollment visits and/or orientation sessions, students have adequate opportunities to discuss issues related to transferring/articulation with college/university staff, by group surveyed.



Two-thirds of advisors reported that they feel sufficiently aware of all components of the Arizona transfer system, but 34 percent do not feel sufficiently aware. An even greater percentage of respondents (47%) indicated that they do not feel that they know of changes that are made to the transfer system in a timely manner when they are made. There were only minor differences between university and community college respondents on the former question, but university advisors were more likely to feel that they do not know of changes made to the transfer system when they are made. Transfer student ombudspersons were much more likely to feel sufficiently aware of all components and to feel as though they are made aware of changes in a timely manner than those who are not ombudspersons. Also of note is that advisors from the rural community colleges were far more likely to feel as though they are not sufficiently aware of all components of the transfer system or made aware of changes in a timely manner when they are made as compared to their counterparts from the urban districts.

Figure 28. Extent to which Advisor Survey respondents agreed that they feel sufficiently aware of all components of the Arizona transfer system (Question 32), and know of changes to the Arizona transfer system in a timely manner after they are made, by Community College (Question 1, CCs only).



Respondents to the university student survey were asked to describe any problems they encountered during the transfer process, and respondents to the advisor survey were also asked what some of the most common problems or difficulties they had observed students face with the transfer process. Students and advisors gave very similar problems, with the main ones including issues with the transferability of courses and credits, issues with advising, confusing and/or misinformation, and problems and delays in admissions and with transcripts. Students also frequently mentioned difficulties with adjusting to university life and the rigor of university coursework. In regards to issues with advising, students most often cited issues with bad advising, while advisors typically referenced students taking the wrong courses, not contacting the right advisor or not knowing who to contact with advising questions. It should be noted, also, that fewer than half of all university student survey respondents gave a problem or difficulty, and 135 students gave an answer such as "none" or "n/a" indicating that they experienced no problems.

Table 14. University Student Survey Question 13. Please describe any problems or issues you encountered during the transfer process. (n = 321)

Problems	Frequency	Percentage
Bad advising/ Conflicting information	77	24.0%
Transferability of courses	72	22.4%
Comments on adjusting to the university life/courses	67	20.9%
Delays/ Application/Transcript problems	55	17.1%
Financial aid communication problems	7	2.2%
Other	43	13.4%

*135 additional responses such as "none" or "n/a" are not included.

Table 15. Advisor Survey Question 29. What were some of the most common problems or difficulties that students encountered during the transfer process? (n = 336)

Common Problems or Difficulties	Frequency	Percentage
Transferring credits/equivalency/courses taken at community college do not apply to program	84	25.0%
Confusion and misinformation (i.e.: student not aware that getting Bachelor's degree might take more than 2 yrs, took wrong courses)	83	24.7%
Advising issues (student not taking right courses/not contacting right advisor at the right time/don't know who to contact)	75	22.3%
Admissions problems (i.e.: student not knowing enough about process, AGEC transcript issues)	62	18.5%
Acclimation to University/preparing for smooth transition by following deadlines and being proactive	52	15.5%
Lack of consistency among community colleges and universities/changes in programs and requirements	33	9.8%
Course availability	17	5.1%
Student hasn't chosen major/didn't choose it early enough/change major	13	3.9%
Students not prepared for rigor of university coursework	11	3.3%
Other	24	7.1%

Community college and university students cited slightly different things that they considered the easiest part of the transfer process, due in large part it seems to their different perspectives. University students, for example, most often mentioned transferring credits and grades (21%) and paperwork and administrative details (19%) as the easiest parts, while community college respondents mentioned these things much less frequently, likely because they have not yet gone through their transfer. In fact, 11 percent of community college respondents said that they have not yet started the transfer process. One thing that both groups did mention very frequently was meeting and working with academic advisors, which was the most common response among community college students (21%) and the second most common among university respondents (19%).

Table 16. What student respondents think is the easiest part of the transfer process, by group surveyed.

The easiest part of the transfer process	University Students Percent (n = 424)	CC Students Percent (n = 229)
Meeting and working with academic advisors	18.6%	21.3%
Transfer guides/mapping out required courses	3.8%	12.6%
I have not started the process yet	0.0%	10.6%
Completing paperwork and administrative details (including having transcripts sent)	18.6%	10.1%
Finding the right information	0.0%	7.7%
Transferring credits and grades	20.6%	7.2%
Attending class	2.5%	6.3%
Nothing in the process is easy	4.9%	5.8%
Registering/enrolling	7.2%	3.9%
Orientation and transfer classes	2.5%	3.4%
The entire process in general	7.2%	3.4%
Doing things electronically	4.5%	0.0%
The community college help in transferring	1.6%	0.0%
Adapting to the university	1.3%	0.0%
Other	6.7%	7.7%

The three most commonly given answers when asked for the most difficult part of the transfer process were the same for both groups of students, and also overlapped with the easiest parts offered previously. Administrative issues and paperwork was the most frequently cited difficulty from both groups (24% and 23% of community college and university respondents, respectively). The next two were reversed in order for the two groups, but were transferring credits (19% and 21% of community college and university respondents, respectively) and academic advising (10% and 22% of community college and university respondents, respectively).

Advisors, ATF members and admissions and registrar staff were asked to give the greatest strengths and weaknesses of the Arizona transfer system as a whole, and also to offer recommendations for improvement. All three groups frequently cited the ease of transfer and the fact that courses are guaranteed to transfer as one of the primary strengths of the system. All three groups also referenced the available information resources, such as the course equivalency guide and the CAS website. ATF members and admissions and registrar respondents also cited the communication and collaboration between the community colleges and universities as a major strength. Consistency and ease of use were also mentioned as strengths, although less frequently.

All three groups also gave similar responses as to the greatest weakness of the system. A lack of consistency and communication, and too many changes being made resulting in out of date information were the most frequently given weaknesses from all three groups. ATF members, more specifically, mentioned the way in which the universities

unilaterally make changes as a weakness. Advisors and ATF members also frequently mentioned that the system is too complicated and difficult to use, and both groups also mentioned a need for better training of advisors so they can provide better advisement for students. Advisors also cited a lack of awareness among and use by students, although less often than those previously mentioned.

Overwhelmingly the primary recommendation for improvement offered by both ATF members and admissions and registrar staff was to bring greater standardization to the process. Advisors, on the other hand, most frequently recommended that better advising be given to students, and that they as advisors need better training so that they can provide all the information to students and show them how to use the system. Advisors and ATF members also mentioned the need for improved and increased communication between the community colleges and universities. Simplifying the process and making it more user-friendly were also frequently mentioned, as was publicizing the transfer system to students more.

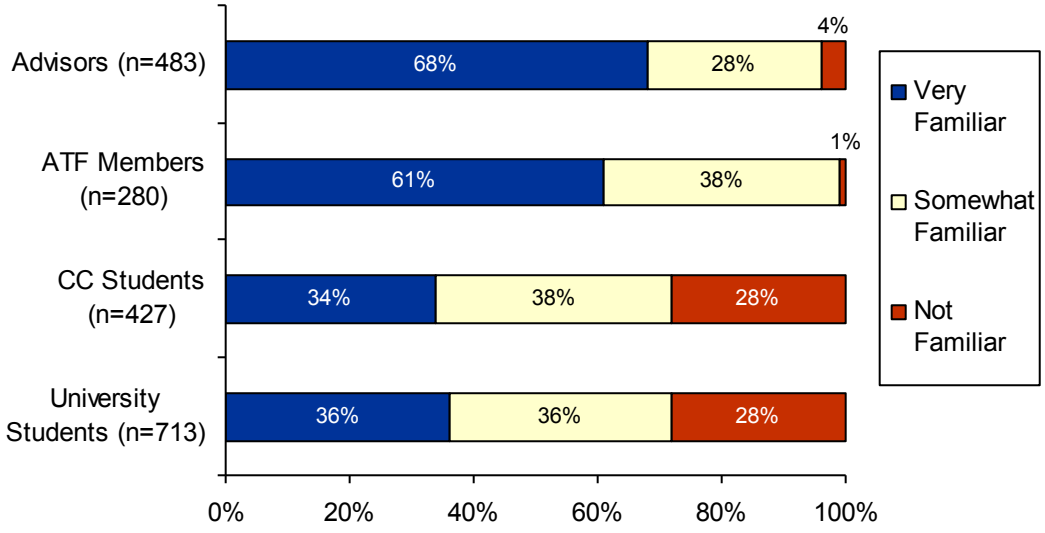
C. Arizona General Education Curriculum (AGEC)

The Arizona General Education Curriculum (AGEC) is one of the primary components of the Arizona transfer model. The AGEC, of which there are three types – the AGEC-A (Liberal Arts); AGEC-S (Science) and AGEC-B (Business) – is a block of 35 credits that transfers en masse from any of the Arizona community colleges to any of the three public universities. Students who complete an AGEC are guaranteed admission to the university, provided that GPA requirements are met, and the AGEC transfers as a block of requirements rather than individual credits.

Awareness and familiarity of the AGEC is higher among advisors and faculty than it is among students. Among advisors and faculty, nearly all are at least "somewhat familiar" with the AGEC, while more than one-quarter of both community college and university students indicated that they are not familiar with the AGEC.

Nearly all (91%) community college advisors indicated that they are "very familiar" with the AGEC, compared to 51 percent of university advisors. Students who are currently attending or who transferred from Pima Community College had the highest levels of familiarity with the AGEC, while students who are attending or who transferred from Maricopa were far more likely to not be familiar. Likewise, students who intend to transfer to UA or who already transferred to UA had the highest levels of familiarity with the AGEC.

Figure 29. Extent to which respondents are familiar with the Arizona General Education Curriculum (AGEC), by group surveyed.

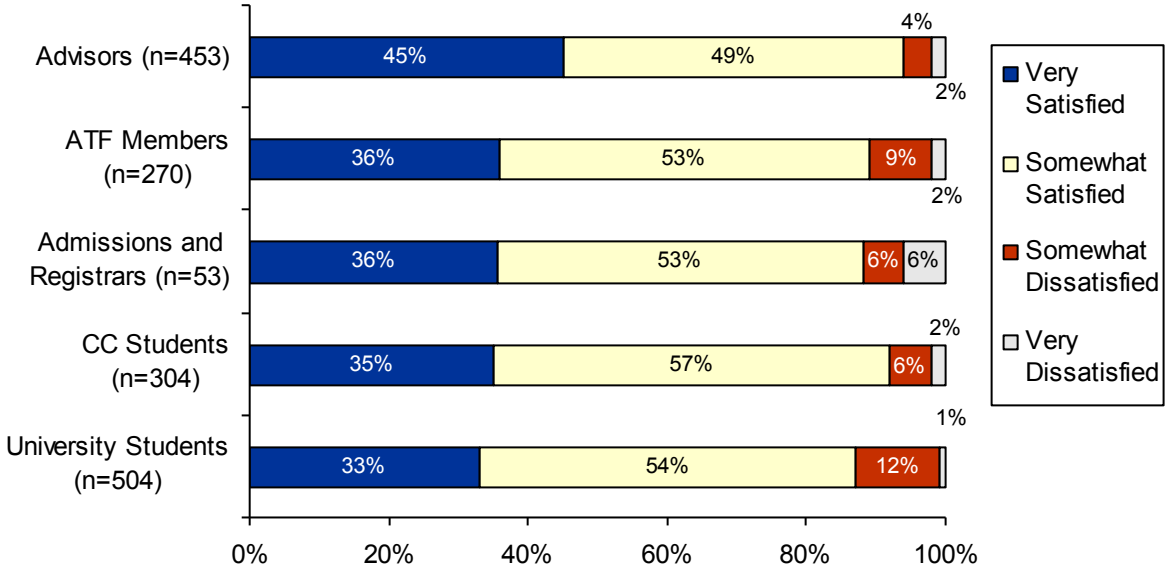


All of the stakeholder groups surveyed are also generally satisfied with the AGEC, with the percent of respondents indicating that they are either "somewhat satisfied" or "very satisfied" ranging from a low of 87 percent among university students to a high of 94 percent among advisors.

Community college advisors were much more likely to be "very satisfied" and satisfied in general with the AGEC than university advisors, and Pima and NAU advisors were likewise more likely to be "very satisfied" and satisfied in general than advisors at the other institutions. Among ATF members, university representatives were slightly more likely to be satisfied to some degree than community college members, and Maricopa representatives, in particular, had the highest levels of dissatisfaction (20%).

Among university student respondents, there were minor differences in satisfaction based on the college they transferred from or the university they transferred to, although ASU students and those who transferred from Maricopa had lower overall levels of satisfaction. Likewise among community college students, Maricopa students had a somewhat lower overall level of satisfaction, as did students that intend to transfer to ASU. University students who indicated feeling "very prepared" upon transferring had the highest levels of satisfaction with the AGEC, and university students that never visited with an academic advisor while at their community college were more than twice as likely as other respondents to be dissatisfied (37%).

Figure 30. Level of satisfaction with the Arizona General Education Curriculum (AGEC), by group surveyed.

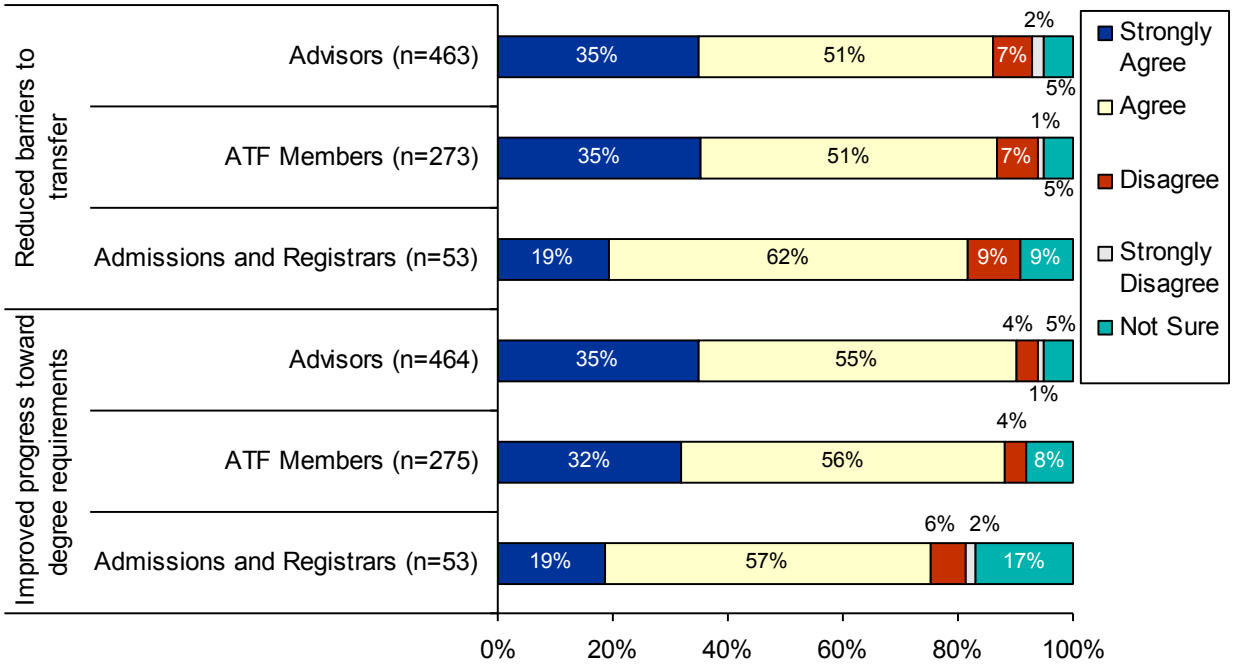


There was a high level of agreement between advisors and ATF members that the AGEC has been successful in accomplishing two of its goals: to reduce barriers for students to transfer, and to improve student progress toward meeting baccalaureate degree requirements. Nearly 90 percent of advisors and ATF members agreed that the AGEC has accomplished each of those goals. Admissions and registrar staff did not agree as strongly, but more than three-quarters agreed or strongly agreed that the AGEC has accomplished both goals.

Interestingly, although the distribution of responses were almost identical for both questions on both the advisor and ATF surveys, the distribution within each survey between those from community colleges and universities were very different. Community college advisors agreed much more strongly that the AGEC had accomplished both goals, for example, while university advisors were more likely to disagree or to be unsure. Nearly half of community college advisors (49%, while another 47% chose "agree") strongly agreed that the AGEC has facilitated progress toward meeting baccalaureate degree requirements, while only 25 percent of university advisors strongly agreed with the same statement, seven percent disagreed or strongly disagreed and eight percent were unsure (compared to 3% and 2%, respectively, of community college advisors). The same pattern, although to a slightly lesser degree, held for the question of improvement toward meeting baccalaureate degree requirements. Among ATF members, on the other hand, those from the three universities agreed more strongly with both statements than their community college counterparts, although university ATF members were also more likely to disagree or strongly disagree and the percentage of ATF members who either agreed or strongly agreed was greater among community college respondents.

University respondents to the admissions and registrar survey were also asked how likely a student who otherwise would not be admitted to their university but had completed an AGEC would nonetheless be granted admission. More than two-thirds (69%) reported that a student would be at least "somewhat likely" to be admitted under that scenario. On the other hand, 62 percent of respondents said that a student with an associate's degree would be at least somewhat likely" to be admitted to their university if they otherwise would not be admitted, suggesting that an AGEC may hold slightly greater value in the admissions process than an associate's degree.

Figure 31. Extent to which respondents agree that the AGEC has reduced barriers for students to transfer, and has facilitated student progress toward meeting baccalaureate degree requirements, by group surveyed.



Respondents to the admissions and registrar survey were asked a number of questions about how the AGEC is processed administratively, and although the number of respondents was small there was a good deal of variability in the data. Among community college respondents, seven of 17 (41%) said that students apply for their AGEC through their academic advisor, while six (35%) reported that students can do so through the registrar office. Only two of the 17 indicated that the AGEC is certified automatically. Nine of 19 (47%) respondents said that the earliest students can apply for their AGEC is the semester of graduation, while six (32%) reported that students could apply upon completion of all AGEC requirements. Eight respondents said that the AGEC is recorded as an award or certificate on the student transcript, six said that it is printed at the end of the transcript, and two reported that individual courses that are part of an AGEC are followed by the appropriate letter (A, B or S). A higher percentage

of university respondents disagreed than agreed that community colleges are consistent in how they identify AGECs on student transcripts. Only 39 percent agreed that community colleges are consistent, while 48 percent disagreed. Sixteen university respondents elaborated that there is a lack of standardization and clarity in how AGECs are recorded by community colleges.

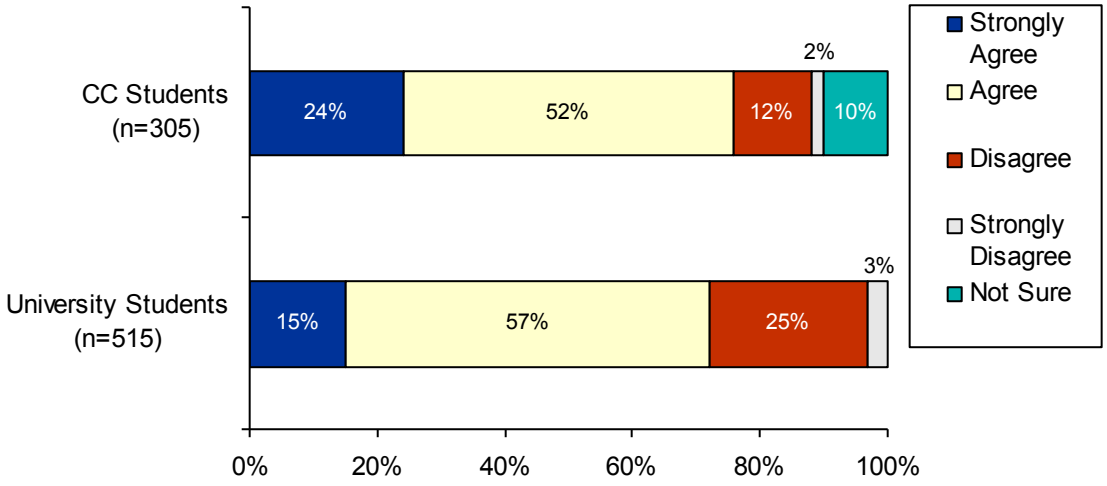
Thirteen of 18 (72%) respondents said that their institution shows "AGEC in progress" on student transcripts. Four respondents noted that "AGEC in progress" is recorded on the student transcript, three said that it is recorded as "General Education Award/Certificate in progress," and three indicated that it is recorded on a separate document that accompanies the student transcript. The vast majority (87%) of university respondents to the admissions and registrar survey reported that their institution uses a standard admissions procedure for students with "AGEC in progress." When asked to describe the procedure, half of 18 respondents said that some requirements are waived in the case of an "AGEC in progress."

University respondents to the admissions and registrar survey were also asked how a student's AGEC status is communicated to their academic department in which he or she will be enrolled. Sixteen of 26 respondents (62%) said that it is communicated through an internal database or software program, while eight (31%) said that it is recorded on the student's transcript, which is sent to the department.

Among students there seems to be some confusion over the AGEC. Among those who indicated that they were at least somewhat familiar with the AGEC, approximately three-quarters of community college (76%) and university students (72%) indicated that they thought the requirements for the AGEC were clear (either agreed or strongly agreed with the statement that the requirements were clear). University students were more likely to disagree that requirements were clear, while ten percent of community college students were not sure. In total, therefore, 48 percent of university students were either not familiar with the AGEC or were unclear about its requirements, while 45 percent of community college students surveyed were either unfamiliar or unclear about the AGEC.

University students who transferred from a Maricopa community college were most likely to disagree that the requirements for completion of the AGEC are clear, and community college students currently attending a Maricopa college were also most likely to disagree. University students who had visited with an academic advisor at least once per semester before transferring were more likely to be clear on the AGEC requirements than those who did so less frequently or not at all, although the same trend does not hold among community college respondents, where students who never visit an academic advisor reported a similar level of clarity as those who do so more than once per semester.

Figure 32. Extent to which respondents agree that the requirements for successful completion of the AGEC are clear, by group surveyed.



Despite the fact that so many students are unfamiliar with or unclear about the requirements for the AGEC, 44 percent of university students reported that they completed an AGEC while at the community college, and 61 percent of community college students indicated that they plan to complete an AGEC. The AGEC-A is the most popular, as twice as many university students indicated having completed the AGEC-A as reported completing the other two combined. The AGEC-A is also more popular among community college students, although 41 percent of community college students who said they will complete an AGEC were unsure which of the three they will complete.

University students at UA were the most likely to have completed an AGEC (80% of those who were familiar with AGEC), while students at ASU were the least likely (53%). Among both community college and university students, those who reported that they never visit(ed) with an academic advisor were much less likely to complete an AGEC than those who had. Also in both cases, females were more likely to complete or plan to complete an AGEC, particularly the AGEC-A, while males were more likely to complete or plan to complete an AGEC-S.

Figure 33. University Student Survey Question 16. Did you complete an AGEC during your studies at your community college? (n = 515)

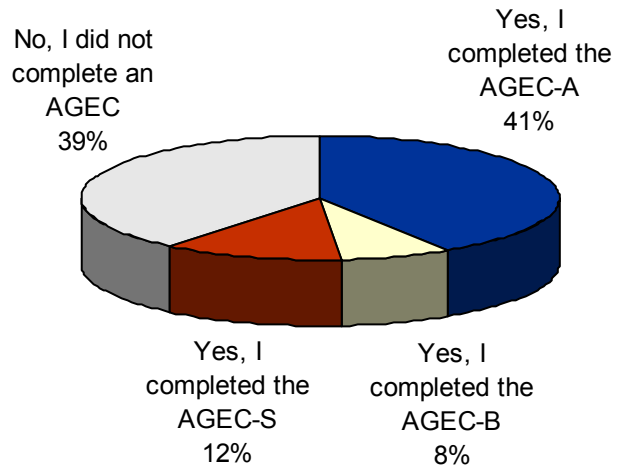
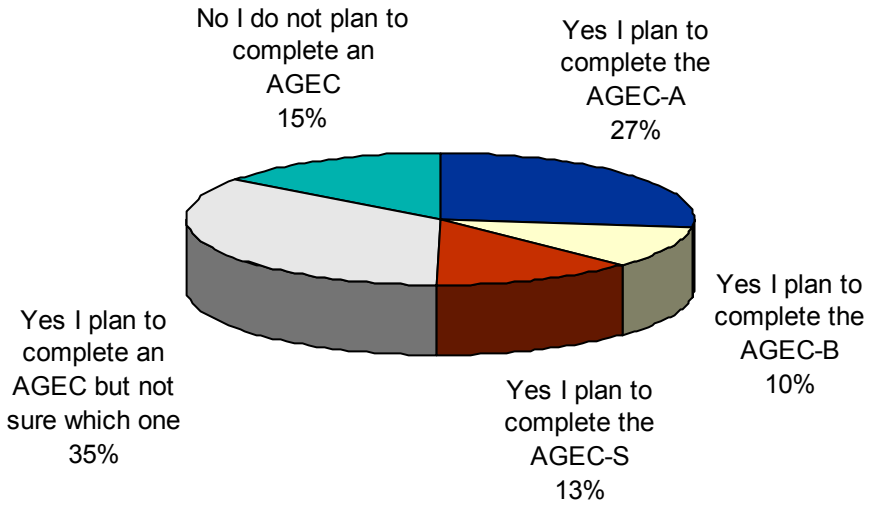


Figure 34. CC Student Survey Question 12. Do you plan to complete an AGEC during your studies at your community college? (n = 308)



Among students who completed or plan to complete an AGEC, the most commonly cited reason for doing so is the ease of transfer and/or the fact that the credits are sure to transfer (43% and 31% of CC and university respondents who completed/plan to complete an AGEC, respectively). The next most commonly mentioned reason is to take care of general education requirements (21% and 22% of CC and university respondents who completed/plan to complete an AGEC, respectively). The convenience, efficiency, and cost of completing the AGEC was also a common response.

Table 17. The primary reason respondent completed/plans to complete an AGEC during their studies at the community college, by group surveyed.

Reasons to complete an AGEC	University Students Percent (n = 277)	CC Students Percent (n = 212)
Easier to transfer to a university/Ensure transfer of credits	31.0%	42.9%
Cost and time efficient/Convenience	19.1%	7.5%
To take care of general education/core requirements	22.4%	20.8%
To graduate/Obtain Associates/Better flexibility	7.2%	8.0%
I was advised to	7.2%	1.9%
It fell in line with my Associates	1.8%	0.0%
Personal satisfaction/Feeling of Accomplishment	1.1%	0.0%
To guarantee further education	0.0%	8.5%
I already have it	0.0%	2.4%
Career related	0.0%	2.4%
Not Sure/Not sure if I completed this or not/Didn't know I completed it	5.8%	0.0%
Other	4.3%	5.7%

Among university students who were familiar with the AGEC but who did not complete one while at the community college, the most common reason for not doing so was that they were not aware of it (28%, perhaps indicating that they should have reported "not familiar" when asked their level of familiarity). Other common reasons for not completing the AGEC include planning to transfer early (21%), and a perception that the classes are unnecessary or a waste of time (19%). Among community college students who were familiar with the AGEC but who do not plan to complete one, nearly half (46%) reported that they plan to complete an associate's degree instead.

Advisors, ATF members, admissions and registrar staff and students were all asked what they thought the greatest strengths and/or benefits of the AGEC were, and there was a great deal of consistency among respondents' answers. With some variation, all four groups felt that the greatest strengths of the AGEC are that it transfers as a block, satisfies general education requirements, and generally makes transferring easier. Students also mentioned the utility of the system as a framework, the variety of courses/well-roundedness of the AGEC, and the preparation it provides for university studies and/or a job as strengths. ATF members also pointed to the consistency throughout the system, and the chance for collaboration between the universities and community colleges as strengths. Admissions and registrar staff also highlighted the consistency/standardization of the AGEC as one of its primary strengths.

Table 18. University Student Survey Question 21. What do you consider to be the single most beneficial aspect of the Arizona General Education Curriculum (AGEC)? (n = 340)

Aspect	Frequency	Percentage
Ease of transferability/Transferability of courses	95	27.9%
Variety of courses /Well-rounded	66	19.4%
Usefulness as a framework	42	12.4%
Taking care of general education courses early on	41	12.1%
Saves money	32	9.4%
Preparation for university/job	28	8.2%
Quality of teachers/courses/Smaller class size	10	2.9%
Other	26	7.6%

Table 19. CC Student Survey Question 17. What do you consider to be the single most beneficial aspect of the Arizona General Education Curriculum (AGEC)? (n= 200)

Single most beneficial aspect of the AGEC	Frequency	Percent
Ease of transferability/Transferability of courses	59	29.5%
Preparation for university/job	50	25.0%
The ease of use/good guide/path	32	16.0%
Variety of courses /Well-rounded	25	12.5%
Saves money	11	5.5%
Taking care of general education courses early on	9	4.5%
Other	14	7.0%

Students were also asked what they felt was the least beneficial aspect of the AGEC. The most common response by both university and community college students (17% and 33%, respectively) was that the AGEC was too time consuming/requires too many extraneous classes. The next most common responses varied between the two groups, as community college students felt as though the AGEC was too complicated and/or confusing (11%), while university students pointed to a lack of information or bad information and/or advising (15%), problems with the transfer process and/or transfer of credits (12%) and issues with the courses themselves – either that they were too easy (9%) or too confining (8%). Nineteen percent of community college students and 22 percent of university students indicated that everything about the AGEC was beneficial and there were no least beneficial aspects.

Table 20. What respondents consider to be the single least beneficial aspect of the Arizona General Education Curriculum (AGEC), by group surveyed?

Least beneficial aspect of AGEC	University Students Percent (n = 277)	CC Students Percent (n = 174)
Too time consuming/Too many extraneous classes	17.3%	33.3%
Everything was beneficial	21.7%	19.0%
Too complicated/confusing	4.3%	10.9%
The transfer process/Transferability of credits	11.9%	7.5%
Too confining/Few choices in classes	7.9%	7.5%
Courses too easy/ Does not prepare for university level	9.4%	5.7%
Lack of/bad information/advising	14.8%	3.4%
Not as useful as a degree	3.2%	2.3%
Other	9.4%	10.3%

Advisors, ATF members and admissions and registrar staff were asked what they thought was the single greatest weakness of the AGEC, and were also asked to give recommendations for improvement. Advisors most often reported (24%) that there are school-specific requirements that are not always met and that students end up having to take extra courses, while 13 percent of ATF members mentioned the same issue. Other common weaknesses pointed out by both groups include a lack of consistency and coordination between the community colleges and universities (14% and 18% of advisors and ATF members, respectively), and a perception that the AGEC is confusing and/or complex (15% and 12% of advisors and ATF members, respectively). Likewise, although some admissions and registrar respondents mentioned consistency/standardization as a strength, others (24%) saw it as a weakness, and 21 percent reported the lack of flexibility/applicability/customization of the AGEC to certain majors as a weakness. ATF members were also particularly concerned (15%) with the infrequency of updates when changes are being made. All of the ATF respondents that mentioned the changes and lack of updates were from community colleges. Similar to this theme, 17 percent of admissions and registrar staff saw lack of familiarity/information by students, faculty and/or advisors as the biggest weakness of the AGEC.

The two most common recommendations for improving the AGEC given by advisors were to increase the consistency between community colleges and universities (26%), and to increase the quality of advising given to students by providing advisors with better training and more tools for helping students choose a major and career (23%). Admissions and registrar staff also most often (26% of responses) mentioned the need for standardization/consistency of AGECs across all colleges as an area for improvement. ATF members most frequently mentioned the need for more communication between community colleges and universities (16%), and 14 percent of community college ATF members said they wanted more say for the community colleges. Eleven percent of ATF members recommended that the breadth and types of courses included in the AGEC be expanded.

D. TRANSFER PATHWAY DEGREES

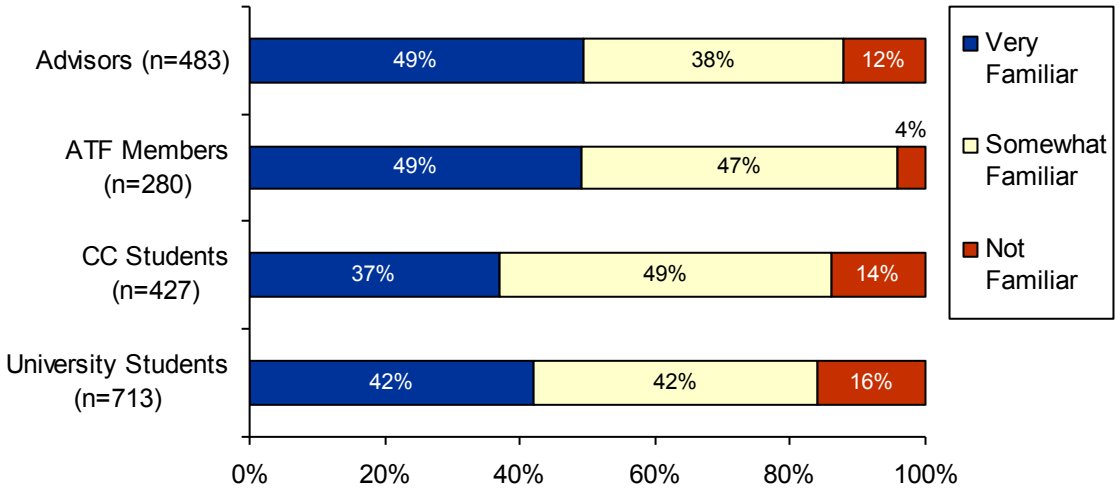
The transfer pathway degrees were established by the Transfer Articulation Task Force as three statewide community college degrees, of which there are three types: the Associate of Arts (AA), Associate of Science (AS), and the Associate of Business (ABus). Each includes the corresponding AGEC (AGEC-A, AGEC-S and AGEC-B, respectively), and within each were intended to be three corresponding pathways based on the university the student intends to transfer to.

Advisors and ATF members indicated a slightly lower level of familiarity with the transfer pathway degrees than with the AGEC, but 88 and 96 percent were at least somewhat familiar, respectively. Students, on the other hand, showed a higher level of familiarity with the transfer pathway degrees than with the AGEC. Whereas 28 percent of both community college and university students were "not familiar" with the AGEC, only 14 and 16 percent, respectively, were not familiar with transfer pathway degrees.

Similar to the AGEC, advisors from community colleges had a much higher level of familiarity with the transfer pathway degrees than those at universities. Eighty-two percent of community college advisors were "very familiar" with the pathways and only one percent were not familiar, compared to 27 and 20 percent, respectively, of university advisors. Community college ATF members were slightly more familiar with the transfer pathway degrees than their peers at the universities, but not nearly to the extent of advisors.

Students that are either attending or transferred from Pima Community College had a higher level of familiarity with the transfer pathway degrees than those from other colleges, but unlike with the AGEC Maricopa students and rural college students had very similar levels of familiarity. At the universities, NAU students were only slightly more aware than students at UA or ASU, while among community college respondents those who intend to transfer to ASU had the lowest levels of familiarity. As with the AGEC, greater frequency of visits with an academic advisor among university students while at the community college was associated with a higher level of familiarity of transfer pathway degrees.

Figure 35. Extent to which respondents are familiar with the transfer pathway degrees, by group surveyed.



Among students who were familiar with the transfer pathway degrees, 59 percent of university students completed a transfer pathway while at the community college and 81 percent of community college students said that they plan to complete a transfer pathway degree before transferring. Including those who were unfamiliar with the transfer pathway degrees, just less than 50 percent of university student respondents completed a transfer pathway degree, while 70 percent of community college respondents expect to complete one while at their community college. Similar to the AGEC, the Associate of Arts (AA) is the most popular transfer pathway degree.

Among community college respondents, students who intend to transfer to NAU were most likely to plan to complete a transfer pathway degree, particularly the AA, but the same difference was not true among university respondents where the percentage completing a transfer pathway degree was nearly identical for all three institutions. University students at NAU were most likely to have completed an AS, however, while ASU students were most likely to have completed an AA and UA students were most likely to have completed an ABus. Although community college students had only minor differences in the likelihood to complete a pathway degree between the colleges, university students who transferred from Pima were more likely to have completed all three of the pathway degrees than students from the other schools. Further, community college students who visit an academic advisor most frequently are were more likely to plan to complete a pathway degree than those who do so less frequently or not at all, although university students showed very small differences in the likelihood to complete a pathway based on how often they visited an advisor.

Figure 36. University Student Survey Question 23. Did you complete a transfer pathway degree during your studies at your community college? (n = 600)

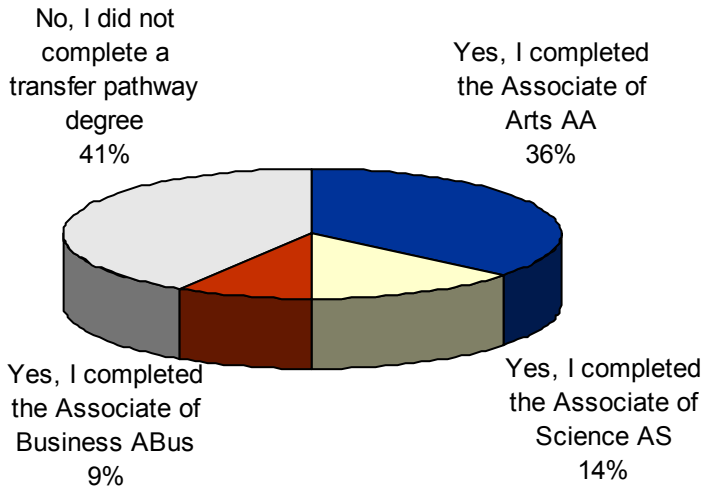
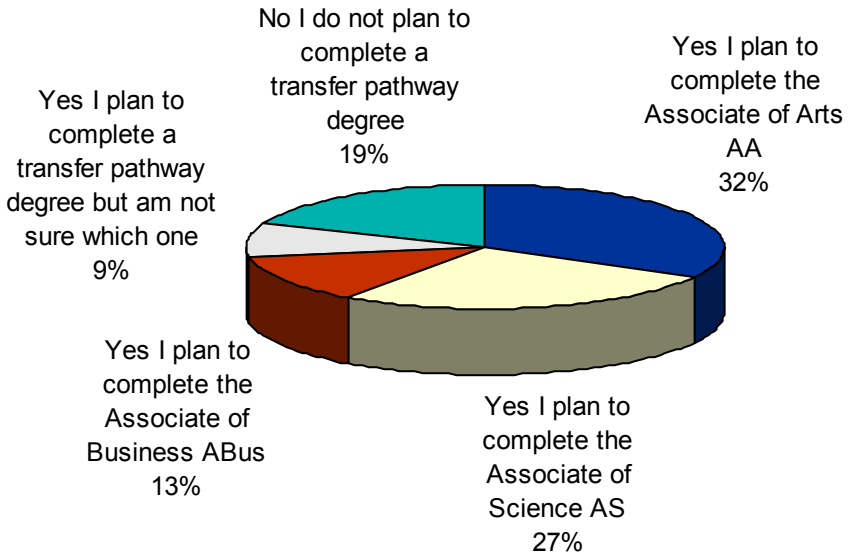


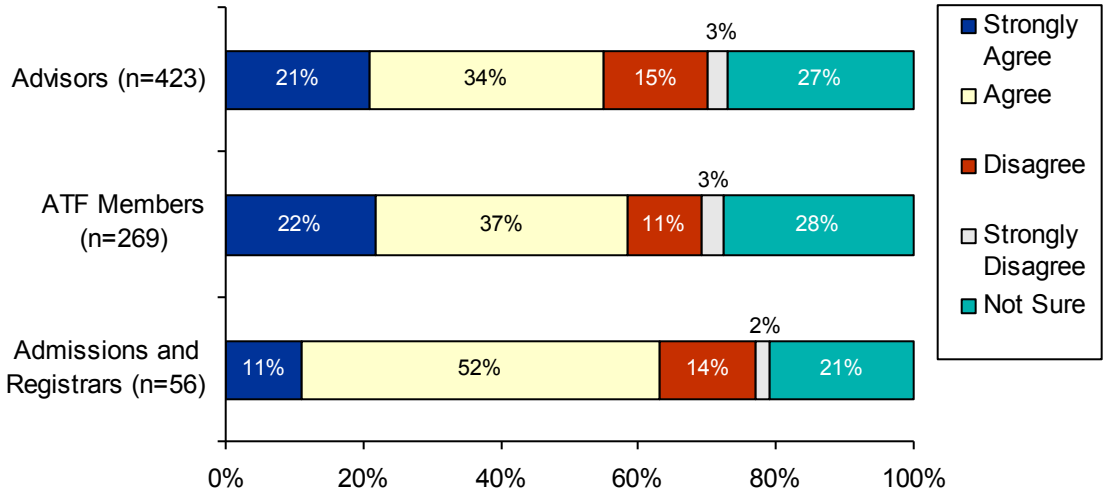
Figure 37. CC Student Survey Question 19. Do you plan to complete a transfer pathway degree during your studies at your community college? (n= 367)



A majority of both university and community college students (54% and 60%, respectively) who completed or plan to complete a transfer pathway degree indicated that they did so because they plan(ned) to stay at the community college for as many credits as possible. Students who did not or do not plan to complete a transfer pathway degree most often selected two reasons for not doing so: they either know the university and degree they want(ed) and followed the transfer guide, or plan(ned) to transfer to the university before completing the pathway. University students most often selected the latter (35% for the latter, 27% the former), while community college students most often selected the former (32% for the former, 22% the latter).

Advisors, ATF members and admissions and registrar staff indicated a high degree of uncertainty as to whether or not students who complete transfer pathway degrees are better prepared for university studies than those who do not. At least 21 percent of each group surveyed were "not sure" as to that effect, with a high of 28 percent among ATF members. Advisors and ATF members agreed more strongly than did admissions and registrar staff that students who complete transfer pathways are better prepared for university studies than those than do not, but the overall percentage of those who agreed or strongly agreed ranged only from 55 percent (advisors) to 63 percent (admissions and registrar).

Figure 38. Extent to which respondents agree that compared to students who do not complete transfer pathway degrees (AA, AS, ABus), students who complete transfer pathway degrees (AA, AS, ABus) prior to transfer are better prepared for university studies, by group surveyed.



Similar to the AGEC, nearly a quarter of respondents for each of the groups surveyed indicated some uncertainty about the requirements for successful completion of transfer pathway degrees. Among advisors and ATF members, an additional 14 and nine percent of respondents, respectively, were not sure if the requirements are clear. Advisors, in particular, were even less sure whether or not the requirements have remained stable over time. Nearly one-third (32%) of advisors were not sure if the requirements have remained stable over time, while there was a fair amount of disagreement that they had remained stable from both advisors and ATF members. Only 54 and 58 percent of advisors and ATF members, respectively, agreed to some extent that the requirements have remained stable.

Community college ATF members from Maricopa community colleges were more likely to disagree that requirements for the transfer pathway degrees have remained clear and stable than were members from the other colleges. Among community college

advisors, respondents from Pima actually disagreed most often that the requirements are clear, although Maricopa advisors were most likely to disagree that they remained stable over time.

Students who intend to transfer or who did transfer to ASU were slightly less likely to agree that the requirements for pathway degrees are clear than students who transferred or who intend to transfer to NAU or UA. Although such differences were minimal among community college students, university students that transferred from one of the rural community colleges had the lowest levels of disagreement that the requirements for completion of the transfer pathways are clear. In both groups of students those that had met with an academic advisor most frequently were more likely to feel clear about the requirements for successful completion of the pathways, while those who had never met with an advisor were most likely to be unclear. Among community college students adult students were less likely to feel clear about the requirements than were traditionally aged students.

Figure 39. Extent to which respondents agree that the requirements for successful completion of the transfer pathway degrees are clear, by group surveyed.

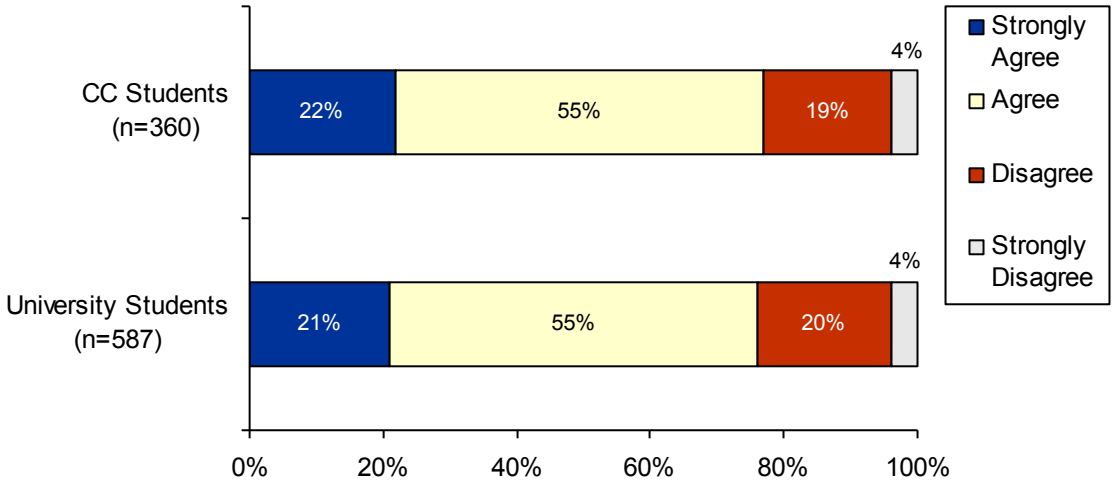
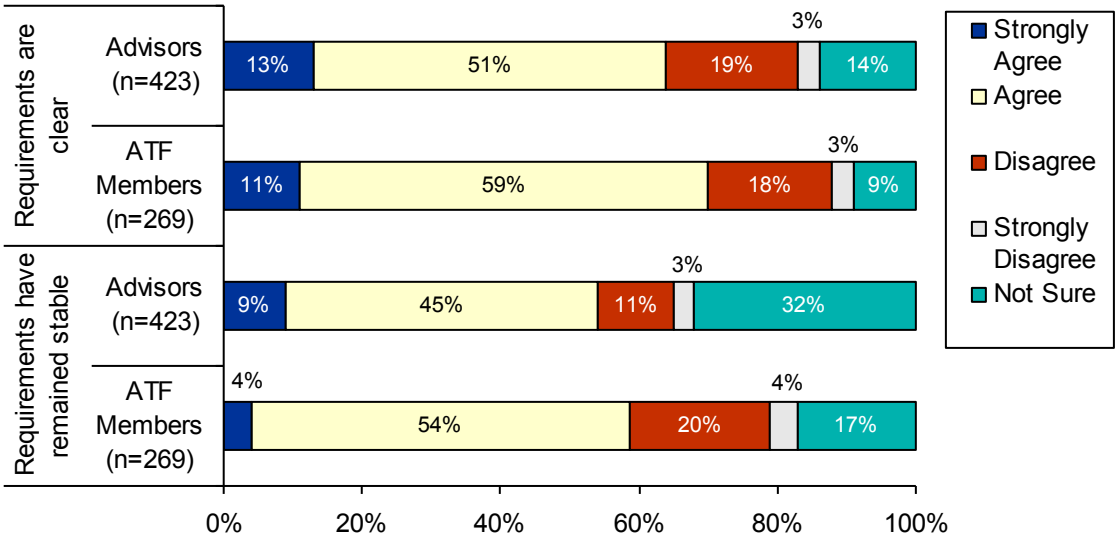
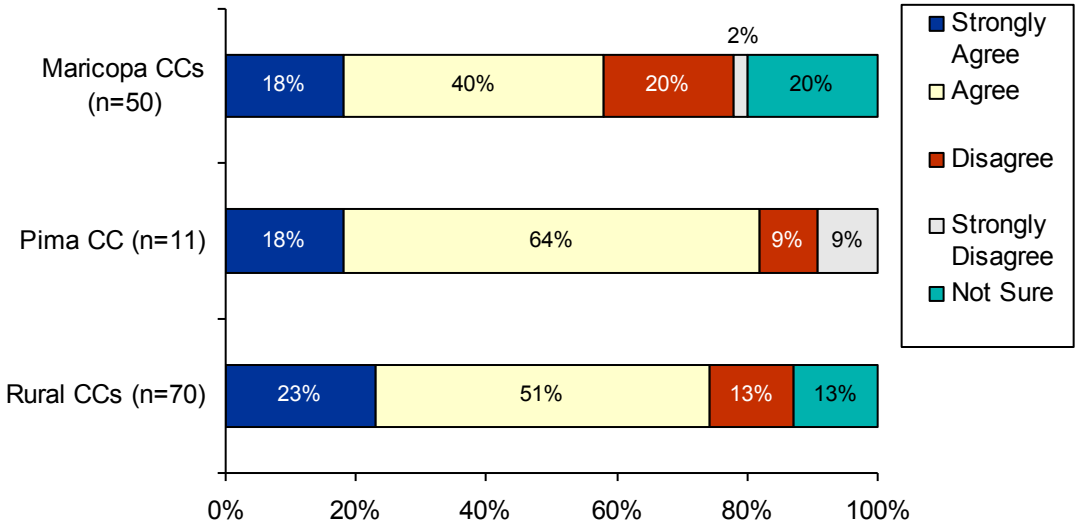


Figure 40. Extent to which respondents agree that the requirements for successful completion of the transfer pathway degrees are clear and have remained stable over time, by group surveyed.



Community college ATF members were also asked about the impact the transfer pathway degrees have had on curricular planning and delivery at their institutions. More than two-thirds (69%) felt that the impact has been positive, but there were differences between the colleges. ATF members from Pima were most likely to agree that the impact has been positive, whereas Maricopa members were most likely to disagree and to be unsure.

Figure 41. Extent to which respondent agrees with the following statement: The transfer pathway degrees (AA, AS, ABus) have a positive impact on curricular planning and delivery at my institution (Question 15), by Community College (Question 1, CCs only).



The primary benefits of the transfer pathway degrees identified by students include the ease of transferability, which was the most commonly cited benefit by both university and community college students (23% and 19%, respectively), taking care of general education courses and preparation for the university, cheaper cost, and the value of having a certificate which looks good on a resume/for employers. Among advisors, ATF members and admissions and registrar staff, similar themes were mentioned as strengths of the transfer pathways. Strengths commonly mentioned by these groups include the ease of transfer, the clear direction and specific path that the pathways provide for students, preparation for admission to and study at the university, and the consistency, clarity and uniformity of the system.

Table 21. What respondents consider to be the single most beneficial aspect of the transfer pathway degrees (AA, AS, ABus), by group surveyed.

Most beneficial aspects of the transfer pathway degrees	University Students Percent (n = 355)	CC Students Percent (n = 201)
Ease of transferability	22.5%	19.4%
Cheaper cost	15.8%	18.4%
Taking care of general education courses/ Preparation for university	16.6%	16.4%
Having a certificate/Looks good on résumé/for employers	21.4%	13.9%
Variety of courses offered	0.0%	10.9%
Serves as a framework/half-way mark	8.5%	8.5%
Smaller class sizes	0.0%	2.5%
It is easy	1.7%	0.0%
Other	13.5%	10.0%

Even though the most commonly mentioned benefit of transfer pathway degrees among students was the ease of transferability, issues with transferability was also an oft mentioned *least* beneficial aspect. The most common response among community college students was that nothing about the transfer pathways is not beneficial, but 21 percent of respondents cited transferability issues as a problem, which was the second most frequent response. Transferability issues were also mentioned by university students, but by far the most commonly cited least beneficial aspect was that the transfer pathway is too time consuming and/or contains too many extraneous classes (24%). Other common responses from both groups include a lack of information, unclear information or poor advising, a perception that the pathways are not as useful for transferring or a career or that they have a lack of prestige, and that course options are too limited.

Advisors most often indicated that the biggest weakness of the transfer pathway degrees is that specific program requirements at the university are not always met (33% of respondents). Inconsistency and a lack of standardization was also a common theme among advisors, ATF members and admissions and registrar staff (11%, 18% and 18% of respondents, respectively). Other common weaknesses mentioned by the three groups include confusing/unclear and/or poor information and advising, inclusion of unnecessary courses, a perception that students are not adequately prepared for the rigor of university studies, and a lack of flexibility.

The most frequently offered recommendations for improving the transfer pathway degrees were to provide better advising to students, make better information and guides available to students and advisors, and to increase the quality and volume of communication between community colleges and universities in regards to the transfer pathways. ATF members also recommended that the transfer pathway degrees be expanded to cover more courses and degrees.

Table 22. Advisor Survey Question 14. What recommendations do you have for improvement to the transfer pathway degrees (AA, AS, ABus)? (n = 183)

Recommendation for Improvement	Frequency	Percentage
Better advising - don't recommend pathway degrees to everyone, be honest if program isn't right for student and be honest about the potential limitations of the program/explain difference between pathway degrees and AGEC	43	23.5%
Better communication and connection between community colleges and universities/increase consistency and make sure all schools "follow the rules"	39	21.3%
Give good transfer guides so students and advisors know what courses transfer and how/make clearer, more user-friendly	32	17.5%
Make the transfer process easier and more "seamless"	18	9.8%
Have community college students meet with university advisor early on/start degree and major planning soon	9	4.9%
Better publicity and more efforts to increase enrollment	8	4.4%
Make coursework as rigorous in community college as in university	7	3.8%
Make the pathway degrees applicable to all majors and programs	5	2.7%
Reduce extra courses students take	5	2.7%
Reduce number of changes made that are not state-wide	5	2.7%
Other	41	22.4%

E. Common Course Matrices

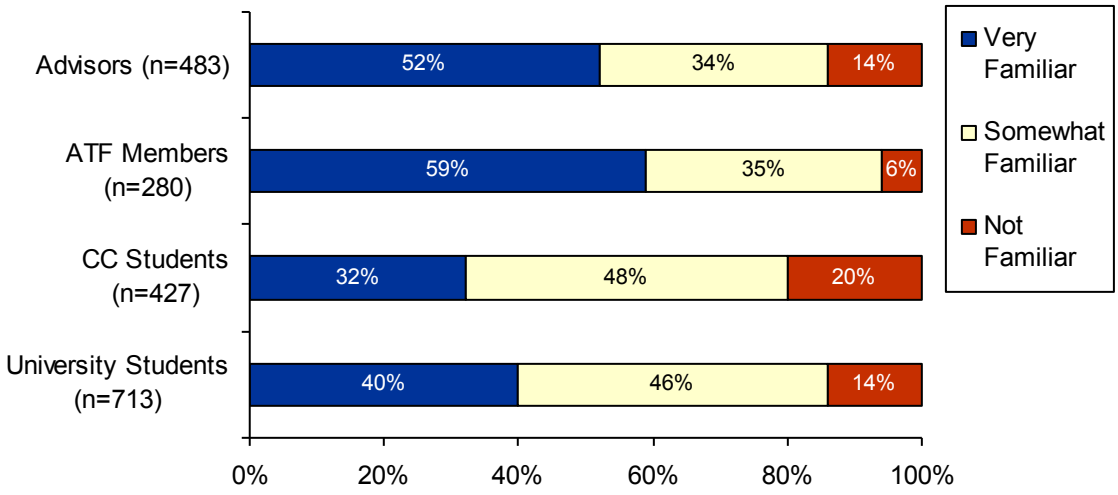
Common courses are defined by Articulation Task Forces as two courses in common between the three universities for each major. Organized together for all of the disciplines, they are referred to as common course matrices. Common courses are particularly useful for students who know their major but do not know which university they want to transfer to.

Awareness of the common courses and common course matrices is relatively high, as at least 80 percent of respondents in each group surveyed were at least somewhat familiar. Compared to awareness of the other two primary components of the transfer model, however, a higher percentage of both advisors and ATF members are not familiar with the common course matrices. The percent of respondents to both surveys who indicated that they are "very familiar" with the common course matrices is higher than those who are "very familiar" with the transfer pathways, however, and lower than the AGEC. Among community college students, the common courses are more familiar than the AGEC, but not as familiar as the transfer pathway degrees. Community college students, in fact, showed the lowest level of familiarity with the common

courses of the four groups. More university students, however, had some level of familiarity with the common courses than with either of the other two components.

Advisors at the community colleges had a higher level of familiarity with the common courses than those from the universities, but ATF members from universities were more familiar with the matrices than their community college peers. Among both groups of student respondents those who are attending or transferred from Pima Community College and those who intend to transfer or already transferred to the University of Arizona were most familiar with the common courses. University students were also more likely to have a higher level of familiarity with common courses the more often they met with an academic advisor while at their community college.

Figure 42. Extent to which respondents are familiar with the common courses/common course matrices, by group surveyed.

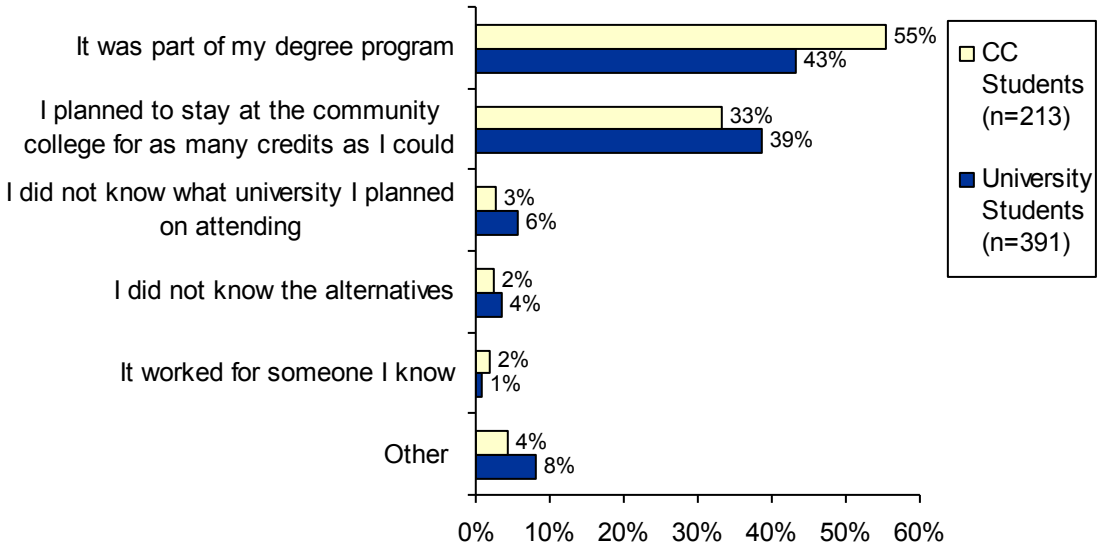


Among both community college and university students who were at least somewhat familiar with common courses 64 percent indicated that they had taken or plan to take common courses. Very small percentages (6% and 4% of community college and university students, respectively) said that they had not taken common courses, while nearly a third of respondents were not sure or did not know. Thus, there was a high degree of uncertainty and unfamiliarity regarding common courses in both student populations. Community college respondents who plan to transfer to ASU or UA were more likely to take or plan to take common courses (73% and 69%, respectively) than students who plan to transfer to NAU or who do not know their transfer destination (55% and 52%, respectively). There were very minimal differences among university respondents based on their institution, the college they transferred from and other variables.

For both groups of students the primary reasons they took/plan to take common courses are that it was part of their degree program or that they plan(ned) to stay at the

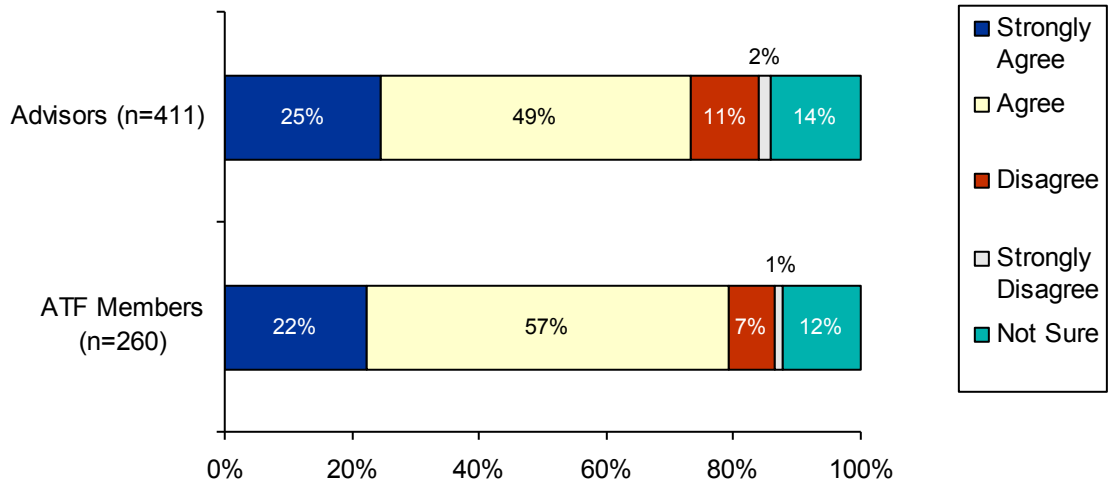
community college for as many credits as possible. The number of respondents who were asked the primary reason that they did not take or plan to take common courses was very small, and there was no predominant reason given. The two most common choices, nonetheless, were that the student already knew their university and followed the transfer guide, and that they did not know the alternatives.

Figure 43. Primary reasons respondents took/are currently taking/plan to take courses identified as common courses, by group surveyed.



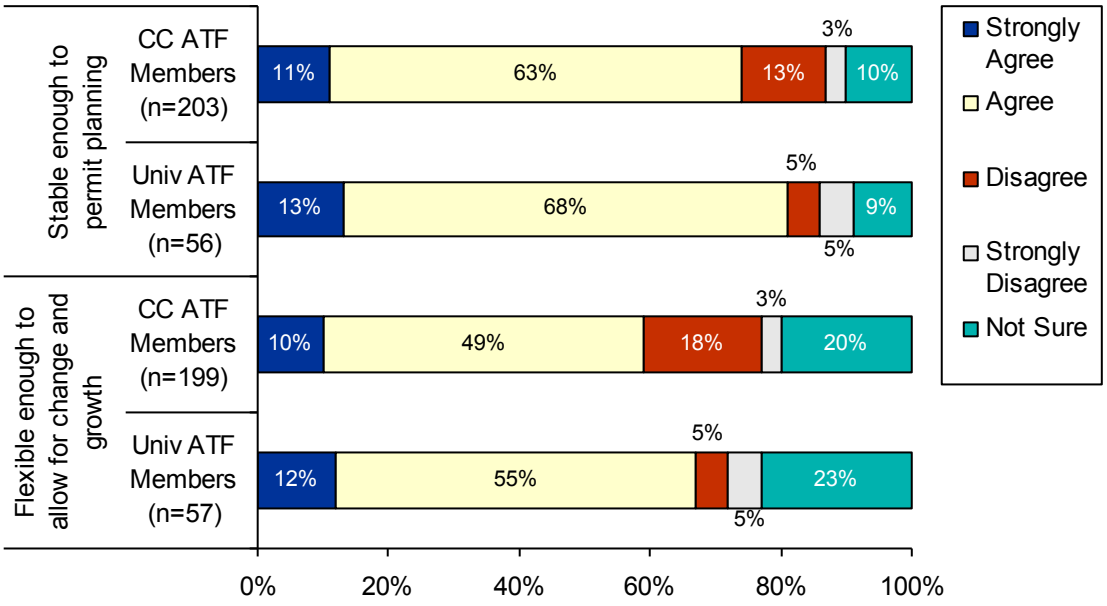
Approximately three-quarters of both advisors and ATF members surveyed agreed that the common course matrices have been effective in helping students plan for transferring. Among advisors, those from community colleges agreed that they have been effective more often than their university counterparts, who were more likely to be unsure. Advisors from Pima were most likely to agree, while those from Maricopa were most likely to disagree.

Figure 44. Extent to which respondents agree that common course matrices have been effective in helping students plan for transferring (from a community college to a university), by group surveyed.



ATF members were asked to what extent they felt as though the common course matrices have been stable and flexible enough to allow for adequate curriculum planning and room for growth at their institutions. Overall more respondents agreed that they were stable enough to permit planning (77%) than that they were flexible enough to allow for change and growth (62%). For both statements, however, ATF members from the three universities were much more likely to agree than their community college peers, who were much more likely to disagree.

Figure 45. Extent to which ATF Survey respondents agree that the common course matrices have been stable enough to permit adequate curriculum planning at their institution, and flexible enough to allow adequate room for curriculum change and growth, by Community College or University.



The two most beneficial aspects of the common courses given most often by students are the ease of transferability (23% and 39% of university and community college respondents, respectively) and that they are cost and/or time effective (31% and 21% of university and community college respondents, respectively). Advisors most often reported that the greatest strength of the common course matrices are that they help advising (39%), making it clear to students if and how courses will transfer to the university. Other commonly cited strengths from advisors were that the matrices are clear and easy to use (34%), and that they aid in the transfer process and prepare students for university studies (18%). ATF members mentioned similar strengths as advisors, such as the matrices help students with academic planning and advising (24%), provides uniformity in curriculum (24%), and make clear the transferability of courses from the community college to the university (16%).

Table 23. What respondents consider to be the single most beneficial aspect of the common courses, by group surveyed.

Most beneficial aspect of the common courses	University Students Percent (n = 314)	CC Students Percent (n = 169)
Ease of transferability	23.2%	38.5%
Cost/Time effective	30.6%	19.5%
Offers a well-rounded education/Allows one to explore	14.6%	13.0%
Good preparation for career/university level	4.5%	9.5%
Classes were smaller/More teacher interaction	12.1%	5.3%
Required for the degree	0.0%	4.1%
Choice of location/institution	0.0%	3.6%
Takes care of general education courses	7.0%	0.0%
Good preparation for career/university level	4.5%	0.0%
Other	8.0%	6.5%

University students most often indicated that the least beneficial aspect of the AGEC is that there is an inconsistency between the community colleges and universities in terms of academic rigor, grading and/or course titles (30% of respondents). Other university respondents cited issues with transferability or that the courses may be a waste of time in some programs. Community college students felt that common courses are sometimes boring or are in a discipline that does not apply to the student, and also mentioned issues with transferability. Advisors felt that the biggest weakness of the common course matrices was that they are confusing and difficult to use (30% of respondents). They also felt that students do not know about and do not use the common courses enough, and that there are inconsistencies and poor communication between the community colleges and universities. ATF members also reported inconsistencies between the institutions and unawareness or a lack of clarity among students as the biggest two weaknesses. In both the advisor and ATF surveys respondents from community colleges were more likely to mention inconsistencies between the institutions than their university peers, while university respondents were more likely to feel that the common courses are not being used enough.

Advisors and ATF members gave very similar recommendations for improvement to the common course matrices, and recommendations were also consistent with the weaknesses they gave. The most frequently offered recommendation from both groups was to provide better information and training for students and advisors regarding the common course matrices. Others include increasing and improving communication between the community colleges and universities, increasing consistency, flexibility and uniformity, and expanding the matrices to include more courses and majors.

F. Institutional Differences

There were a number of very interesting differences in perceptions and other feedback between individuals from community colleges and those from the universities, as well as between the different institutions.

G. Arizona Transfer Website (az.transfer.org/cas)

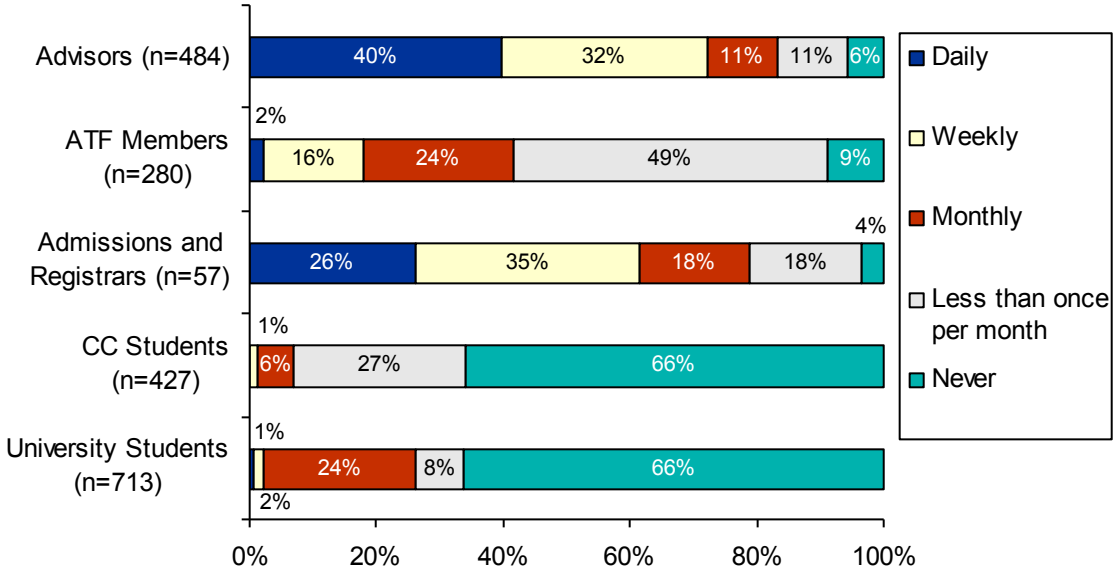
1. Stakeholder Feedback

The different groups surveyed use the Arizona transfer website very differently. Advisors use it most frequently, as 40 percent visit the site daily, 72 percent use it at least once per week, and only six percent indicated that they have never used the site. Not surprisingly, community college advisors reported visiting the website much more often than those at the universities. More than half (58%) of community college advisors visit the site daily, while only 28 percent of university advisors do so daily.

The group that uses it next most often is admissions and registrar staff, of whom 61 percent reported using it at least once per week. Only four percent of admissions and registrar staff and nine percent of ATF members indicated that they have never been to the site, but ATF members use it much less often than the aforementioned groups. Nearly half (49%) of ATF members use the site less than once per month. University ATF members visit the site more frequently than those from community colleges, as 53 percent of university ATF members use it at least once per month, compared to 38 percent of those from community colleges.

Most surprising is how few students use the website at all, regardless of frequency. Two-thirds of both community college and university students surveyed have never visited the transfer website. Those university students who have used it did so more often than their community college peers, as 27 percent used it at least once per month. Only seven percent of community college students visit the site at least once per month, on the other hand, and the majority who have visited only do so less than once per month. Community college respondents at one of the rural colleges were most likely to have never visited the site (74%), while Pima students were most likely to have visited it (46% have visited it at any frequency). University students who are enrolled at or who graduated from the University of Arizona were more likely to have visited the transfer website than those from ASU or NAU.

Figure 46. About how often respondents utilize the Arizona transfer website (az.transfer.org/cas), by group surveyed.



Across the board the highest ratings for the transfer website were given for the quality of information it provides. At least 85 percent of each group of respondents rated the site "good" or "very good" on quality of information. The next highest scores were for the site's helpfulness in facilitating the transfer process; at least three-quarters of each group rated the site "good" or "very good" on that measure. The transfer website received lower scores regarding its aesthetic appeal, ease of navigation and finding information, and for its intuitiveness. Advisors and ATF members generally gave the website the highest ratings, while admissions and registrar respondents and university students gave it the lowest.

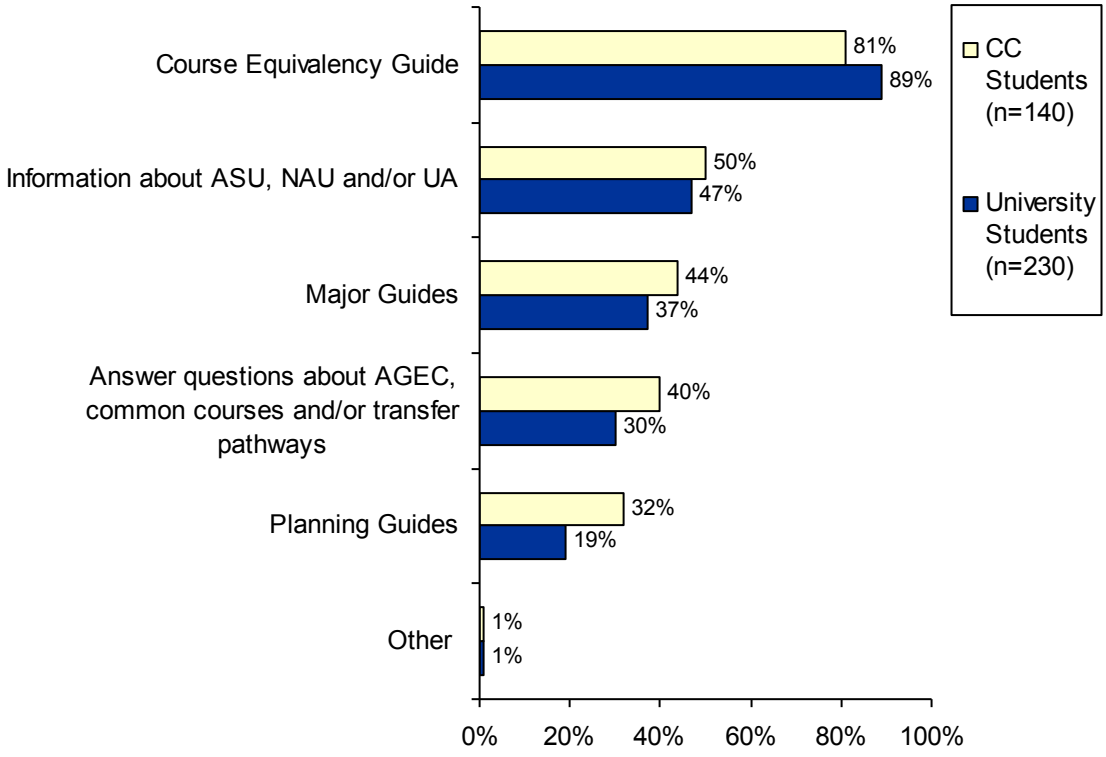
Table 24. Percent of respondents that rated the Arizona transfer website (az.transfer.org/cas) "good" or "very good" on each of the following, by group surveyed.

	Advisors	ATF Members	Admissions & Registrar Staff	CC Students	University Students
Quality of information	97%	98%	89%	88%	85%
Aesthetic appeal	83%	86%	65%	75%	66%
Ease of navigation	82%	80%	67%	80%	68%
Ease of finding information	83%	76%	69%	80%	67%
Helpfulness in facilitating the transfer process	91%	91%	75%	75%	76%
Intuitiveness	78%	77%	67%	77%	67%

Students who have visited the Arizona transfer website in the past have most frequently done so for the Curse Equivalency Guide. Over 80 percent of both groups of

students who have used the website have used the Guide. Many students have also used the website to find information about the three universities.

Figure 47. Purposes for which students use(d) the Arizona transfer website, by group surveyed.*



*Respondents were asked to check all that apply

Admissions and registrar staff also reported using the Course Equivalency Guide when they visit the transfer website. Forty-four of 46 respondents (96%) said that the CEG is the portion of the site they use most often. A majority of advisors (69%) also reported using the site most often for the CEG and to check the transferability of courses. ATF members also cited the CEG as the most commonly used feature of the site, although not a majority of respondents (36%) like the other groups. ATF members also mentioned that they use the site for advising students (31%), and for preparation for ATF meetings (19%). Advisors also mentioned using the site for general advising purposes (17%), and many (14%) reported that they use the Planning Guides.

Respondents to all of the surveys were also asked what information, if any, they need that they cannot currently find on the transfer website. Only 43 students from both surveys mentioned such information, so it seems as though students are generally able to find what they need. Advisors and ATF members responded more often, and across all of the groups one of the most commonly mentioned need was for more up to date, easy to find information. Many respondents mentioned the need for better navigability

of the site, and respondents also cited the need for better information related to the common course matrices.

Recommendations for improving the website were given by advisors, ATF members, and admissions and registrar staff and were consistent with the needs mentioned above. Improving the navigation and making the site more user-friendly were the most common recommendations for all three groups, and were mentioned by nearly or more than half of respondents to each survey. Ensuring that information is current and providing more detailed information were also frequently mentioned. Advisors also recommended that the transfer guides be made easier to use and interpret.

2. Website Usability and Content Analysis, and Benchmarking Activity

A lot of work has clearly been put into the Arizona CAS website, and on the plus side it offers a tremendous amount of great information. Unfortunately the website has also evolved into a monster. As the website has grown with new information and pages of the years, it has become hard to navigate and has clearly outgrown its initial site architecture and foundation. The site needs to be completely overhauled from a design, architecture, and development perspective. The good news is that the new site should be able to leverage the amazing amount of information presently on the site. The future is bright for a new website, but there is much to be done – many issues to address and fix. This section attempts to highlight both the good and bad of the website. In addition, this report and appendix (see Appendix 3) includes data on other similar websites for benchmarking purposes. These other websites are:

- http://regents.ohio.gov/transfer/index.php
- http://www.transferin.net/index.html
- http://www.itransfer.org/newwebsite/
- http://cpe.ky.gov/policies/academicinit/Transfer/
- http://www.mntransfer.org/index.html
- http://acts.adhe.edu/aboutacts.aspx

The State of Arizona's Course Applicability System (CAS) public website is not very modern and could use a fair amount of improvement and updating. A couple of the major areas where it needs improving are:

- making it easier to navigate through the website and locating information
- redesigning the site to make it more aesthetically pleasing.

With that said, one should note that the present site has several good features. Any new updates or upgrades to the website should honor/preserve the several good features and information resources that the site currently offers. Features to retain include:

- the site encourages feedback from users (Tell us! We want to hear your feedback)
- offers a Site Search feature
- great content for Frequently Asked Questions (FAQs)

In addition to the features mentioned above, any revamp should also retain the vast amount of valuable information on the site. Probably the biggest challenge for a revamp of the site is how to design an interface and navigation system to make all of the information more accessible to users. The site has a lot of valuable information that is helpful for students, and a majority of the students who have used the Arizona transfer website have done so for the course equivalency guide and to check the transferability of courses. The website provides all this information and more, so long as the student can locate the desired information. In addition to providing a vast amount of relevant information to students, the website has a good focus. It seems to be set up with the sole purpose of genuinely helping students who are transferring from different colleges, and thus it does not include much unnecessary information. Any revamp of the site should keep this focus. In short, the present site does a decent job of facilitating the transfer and advising process, but there is obviously room for improvement. Here are some examples of web pages which seem to offer great information, but they are rarely visited by users (stats below are from March 2007):

- http://az.transfer.org/cas/students/advising_contacts.htm (176 page views)
- http://az.transfer.org/cas/students/tgxrs.html (90 page views)
- http://az.transfer.org/cas/students/univstudent.html (88 page views)

By incorporating some additional features and revamping some of its layout the State of Arizona's CAS website would become a more helpful, useful, and essential website for transfer college students in the state of Arizona.

a) Updating the Navigation System of the Website

One of the areas in most dire need of improvement is the website's arduous nature in which one has to navigate through it. One of the confusing aspects of the navigation system is that is not consistent from page to page throughout the site. The user almost has to re-learn how to navigate the site on a continual basis. Both the overall design and navigation system should be consistent across the various sections and pages of the website. It is probably challenging for students to find the information that they need because the website is not terribly user-friendly, and it is especially onerous to find and interpret data about course equivalency. While the data is there, it is spread out over many links and consolidating information would make it more efficient and convenient for students to gather the information. One idea is to consider using a drop down menu system that would expand as users placed their mouse over a particular topic. This type of dynamic menu system allows users to navigate through vast amounts of information without having to place every link on the page at one time. From a web

usability perspective, it can be confusing and intimidating to simultaneously display too many choices (link options).

b) Modernizing the Design & Layout of the Pages

A key aspect of the website that needs amending is its appearance. There are almost no photos or images to go along with the words and numbers on most pages of the website, and there is also a very limited amount of color. Because the website looks bland and can appear boring to the viewer, it makes the process of hunting for information even more frustrating for the user, which of course can discourage use of the website even further. Moreover, the design of the web site varies across pages. A new website should aim for a clean modern design that is consistent throughout the entire site.

c) Web Analytics Tell the Story

In March 2007, the State of Arizona CAS website had 17,030 unique visitors. Here are the top 20 most popular pages in March 2007:

- http://az.transfer.org/cgi-bin/WebObjects/Admin_CEG
- http://az.transfer.org/cas/students/
- http://az.transfer.org/cgi-bin/WebObjects/acres
- http://az.transfer.org/cgi-bin/WebObjects/acets
- http://az.transfer.org/cgi-bin/WebObjects/ATF
- http://az.transfer.org/cgi-bin/WebObjects/TSO
- http://az.transfer.org/cgi-bin/WebObjects/transfer_guides.woa/wa/login
- http://az.transfer.org/cgi-bin/WebObjects/CAS_Apps
- http://az.transfer.org/cas/students/transfer_guides.htm
- http://az.transfer.org/cas/CASHome.html
- http://az.transfer.org/cgi-bin/WebObjects/ATF.woa/wa/DegreePathwayQuery
- http://az.transfer.org/cgi-bin/WebObjects/transfer_guides.woa/wa/ASU
- http://az.transfer.org/cgi-bin/WebObjects/transfer_guides
- http://az.transfer.org/cas/students/Transfer_Checklist.doc
- http://az.transfer.org/cas/advisors/
- http://az.transfer.org/cas/students/coursetransfers.html
- http://az.transfer.org/cgi-bin/WebObjects/transfer_guides.woa/wa/UA
- http://az.transfer.org/cas/atass/atf/degreespathways.html
- http://az.transfer.org/cas/atass/student/agecURLs.htm
- http://az.transfer.org/cgi-bin/WebObjects/transfer_guides.woa/wa/NAU

17,030 unique visitors in a month is a decent amount of traffic to have on a web site especially when one considers that the site gets no traffic from search engines or links from third party websites. Unfortunately, the combination of bad design and a dysfunctional navigation system (hard to steer through the website) is a formula for

problems in the website/Internet arena. Indeed, the web stats also reveal this user interface problem. The web stats indicate that users do not navigate deeply into the site. Consider these data points from March 2007 web site log files:

- The average web visitor sees 8 pages per session
- 66% of the sessions last less than 30 seconds
- More people enter the website through http://az.transfer.org/cgi-bin/WebObjects/Admin_CEG than the actual Home Page at http://az.transfer.org/cas/students/
- 1,525 left the website after viewing http://az.transfer.org/cas/students/ (14% exit rate)
- Key Takeway – the design and navigation of this page: http://az.transfer.org/cgi-bin/WebObjects/Admin_CEG should match the overall design and navigation of the other key pages, such as http://az.transfer.org/cas/CASHome.html & http://az.transfer.org/cas/students/

d) Benchmarking

There were many ideas that similar websites used that seemed to be effective in presenting their information that the Arizona transfer website can emulate. One was the access hotline that the state of Ohio provided in order for students to call in if they had additional questions that the website did not provide. Another was a data portal where Kentucky stored not only current but historical data so that faculty and advisors could look up older information on courses if they needed to. Finally, some websites had a "News" link for those who wanted to look at what the administration was currently doing so they could keep up to date, and others had a page just for parents so that they would also be able to know what their child's options for courses would be. These are just some of the good features that the Arizona transfer website could emulate. See Appendix 3 for more details on the benchmarking analysis.

In summary, the State of Arizona's Course Applicability System website needs some improvement to enhance its usage and performance among students, advisors, faculty members and staff. A main need for the website to improve upon is recreating the layout so that it is simpler and more pleasing to the eye. The website has a lot of quality information that is helpful for students if they are able to find it, and so making it easier to navigate will encourage students to use it more. By including some additional features that its peers use, the State of Arizona's CAS website can improve to become an even more useful and vital tool for transfer students in Arizona.

FOCUS GROUP FINDINGS

A. FOCUS GROUP DEMOGRAPHICS

1. Administrative Focus Groups

Five focus groups comprised of various faculty and staff from Arizona institutions of higher education were conducted as part of this study. All the focus groups took place on-site in Phoenix. Separate focus groups were held for each of the following groups:

- Community college advisors representing the state's urban and rural districts: participants included five from the Maricopa Community College district, five from the rural community colleges and one from the Pima Community College District.
- University advisors and administrators related to transfer functions from the three public universities: participants included six from Arizona State University, three from Northern Arizona University and four from the University of Arizona.
- Community college faculty and administrative representatives of the Articulation Task Forces: participants included four from the Maricopa Community College District and four from rural community colleges.
- University faculty and administrative representatives of the Articulation Task Forces: participants included four from Arizona State University, four from Northern Arizona and one from the University of Arizona.
- Admissions and registrar personnel from community colleges and universities: participants included five from Arizona State University, three from Northern Arizona University, four from the University of Arizona, one from the Maricopa Community College District and three from rural community colleges.

2. Student Focus Groups

A total of six student focus groups were conducted for this study, two of which were held on site in Arizona, and four via tele-conference. The focus groups ranged in size from three to nine participants with the average group numbering six students. A separate focus group was held for each of the following groups:

- Current transfer students at Arizona State University.
- Current transfer students at the University of Arizona.
- Current transfer students at Northern Arizona University.
- Current Maricopa Community College District students with plans to transfer to a four-year university.
- Current Pima Community College District students with plans to transfer to a four-year university: participants were all enrolled in an STU210 class which resulted in a more highly informed group of students.
- Current students from various rural Arizona community colleges with plans to transfer to a four-year university.

The composition of the total group of students included 14 (39%) male students and 22 (61%) female students.

B. Advisor Focus Groups

1. University Advisors

Advisors from the University of Arizona, Arizona State University and Northern Arizona University participated in the first focus group. When asked to characterize a success story from the perspective of a transfer student, the consensus description was that of having all credits transfer to another institution, and subsequently having all the credits used for graduation. Several focus group participants referred to timely graduation and having a "hassle-free" transfer. The key to having this happen would be the result of a student receiving information before transfer and having a knowledgeable advisor who knows both ends of the transfer process.

The university advisors said they used to go out to the community colleges to visit with their counterparts, but they haven't been doing that lately. The luncheon get-together provided them with the opportunity to tell the community colleges about changes in university programs, as well as an opportunity for interchange/dialogue.

Most of the advisors indicated having considerable involvement working with the AGEC, almost daily answering phone calls and emails and meeting with students. Reactions about the AGEC were mixed, often depending on the college in which the participant was working. For example, advisors in nursing said it works great, whereas, science college advisors have problems with AGEC because students don't get enough general education courses spread out over the full four years. They have too many general education courses in the first two years without getting a full course load geared toward a specific major. The overriding issue involves students taking more classes at community colleges than they need for the major they plan on declaring to achieve their goals at four year schools. Examples cited were visual communications and engineering, where freshmen were put right in sequence with their curriculum without worrying about an AGEC, while some transfer students completing an AGEC find that they can't finish in four years. It was pointed out that getting an AGEC doesn't mean getting an Associates Degree.

Communications was identified as a problem from several perspectives. According to some of the focus group participants, many students don't know what the AGEC is. A specific scenario in communicating with colleges is that while community college students receive credits for AGEC, it doesn't serve the students well in sciences at the university level. It was suggested that in some instances advisors don't understand the AGEC. For faculty it can be a territory issue—advisors can tell you what the ramifications can be but faculty don't always think of that. One person said, "what I see is a problem, or is one of my concerns, is that most of the conversations are being held (at a higher level) as opposed to community college advisors with university advisors; if

there were better communications between advisors I think that would improve things."

A recommendation offered was to begin advising with the transfer students while at the community college. One of the positive aspects of the AGEC was the community college having the freedom and flexibility to structure an AGEC unique to their campus. Another positive aspect of AGEC is that "it saves work and error," according to one of the participants.

Problems associated with AGEC were key issues referenced in student surveys—students say they don't know what applies from AGEC to majors at the universities. Also suggested in the focus group was a need for clarity of information—perhaps liaisons who go to the community colleges to meet with advisors. Most of the university focus group participants have little or no contact with advisors at the community colleges. One person said advisors should go to the ATF meetings to make sure people making curriculum decisions fully understand the consequences of changes being made. Another suggestion was to encourage students at community colleges to take a class on transfer-related issues (like PIMA CC's STU 210); "I would like to see students taking that during their first year rather than waiting to take it the semester before they transfer. I think that's a way to get students to a university advisor before the semester before they're set to graduate. We want to see those students early, early, early."

The creation of listservs was suggested as one means of improving the sharing of relevant information. "It sounds to me like a key issue is information-sharing. …by setting up listservs if I make a (programmatic) change and you make a change then at least it could be sent to groups of advisors on the listserv and they would have that information," said one of the participants. An associated problem is determining when information changes and when information becomes "official."

In discussing Pathway Degrees, some focus group participants said a strength of the program is the constant coordination with community college faculty and advisors. However, the consensus was that Pathway Degrees are not widely published so students may not know much about the program. A concern is the difficulty for students in keeping up on changes in majors. In what could be an issue to some students, getting an Associates degree can extend their community college education when some courses are not required for a related degree at the universities.

Most of the university advisors knew about common course matrices and thought they were helpful in presenting the courses at all of the community college and four-year universities; as one person said, "Everything is laid out from all the different schools in Arizona, it's good." However, the focus group participants acknowledged that they were not used very often and there was some confusion between the matrices and the course equivalency guide. "It's fairly redundant with the course equivalency guide—it

has the same exact information, it just shows the ones that are required by lots of the programs…I would never use the Common Course Matrices," said one advisor. Among some of the problems expressed about the common course matrices was that there isn't one for every major, and the concept is similar to the course equivalency guide which is considered more official.

Communications between advisors at the community colleges and universities seems to be an issue. One focus group participant expressed the opinion that university advisors are uninvited at the community colleges because of the perception that they are potentially stealing students. One of the concerns is that community college advisors may give inaccurate advice because of incomplete communications or lack of information. And many times, students choose not to meet with advisors. All of the participants agreed that there is a shortage of advisors, and some community college advisors are new to advising and don't know things that they perhaps should know. In transferring, some students may talk to the college they're interested in but not the admissions office. With high turnover among advisors, the need for ongoing advisor training seems apparent, as well as a need for an orientation and a type of manual for new advisors. There seems to be a sense that two cultures exist and campus leaders need to find a way to bring people together at a higher level to find respectful working arrangements to facilitate student success.

Getting accurate and timely information to students was considered an important need, with several focus group participants indicating the need for improved websites and better electronic communications with students. One suggestion was the development of a transfer student listserv for students to talk to advisors, especially among all three universities.

Overall, while they acknowledge that there are improvements to be made, the university advisors felt comfortable with their role (performance?) in the Arizona Transfer System, as well as the system in general.

2. Community College Advisors

All of the participants in the community college advisors focus group said they were familiar with the transfer system involving community colleges and the three Arizona universities. Good information and communication were themes that pervaded the discussion of all transfer components. The general perception was that most of the issues presented below could be taken care of with better communications which would result in up-to-date information for both advisors and students.

The AGEC was considered one of the best aspects of the transfer system, especially the ability students have to take it to any institution in Arizona. Overall, the AGEC was generally perceived to be effective by the participants, especially the AGEC-A version; however there were some specific concerns expressed regarding the AGEC-B (business) and AGEC-S (science). These versions were considered more restrictive than the AGEC-A and created problems for students who changed their major or who did not

receive adequate advising or information when they started a program. The AGEC-B and AGEC-S are considered good guides for students who know what their major will be and stay on that path. Even then there may be problems. An example was cited that while the AGEC-B is good for college admissions, a college department may pull it apart to accommodate their major and that additional courses might be required. Students may not know this prior to transferring. There were numerous comments about this type of problem working with the Kerry School of Business at ASU. In addition, people commented on the many changes taking place in the business programs and that comparing the UA and ASU programs was like "night and day." One advisor suggested that students not use the AGEC-B because of the many changes taking place.

All participants agreed that one problem with the AGEC is that it is not automatically posted on students' transcripts – students have to request this. If the AGEC certification is not on the transcript, students may encounter problems with the admission, transfer of credits and course registration. There are also some timing problems – some institutions only post the AGEC certification at certain times. Universities require proof of the AGEC certification, so if students apply early (before it is posted), their admission is delayed.

A related problem is that the evaluation of classes for AGEC endorsement is not the same across campuses. It was noted that the Maricopa District does not have a district evaluation center, with each institution doing their own. This is especially problematic for out-of-state students who transfer into the community college district and then move on to a university. The universities may end up evaluating the courses differently as well.

Below are some specific AGEC-related issues raised by one or more of the focus group participants:

- Students do not understand that while the AGEC will take care of their general education requirements and admissions to a University, it does not guarantee them admission to a specific program within that institution.
- Some community colleges do not offer all of the courses required for certain versions of the AGEC, e.g., some out-state community colleges do not offer all of the business, science or math classes.
- Students who transfer from out of state or out of county may be limited on the AGEC to a certain number of credits from the home community college.
- Transferability between community colleges is an issue, with some people seeing a need for a community college equivalency guide (like the Course Equivalency Guide) that shows equivalent courses between community colleges.
- The math and science sequences in AGEC are sometimes problematic.

Among the positive aspects that focus group participants related to AGEC are the AGEC certificate, the UA open house for Pima students, the District Articulation Advising Committee at one of the colleges, and regularly scheduled visits from university representatives to some of the community colleges.

The discussion regarding the Transfer Pathway Degrees can best be summed up by the comment from one community college advisor who said, "After three years of advising, I don't know what it is." This participant was not alone, as only three advisors indicated that they used the Pathway Degrees, and attempts to explain them were confusing, at best. The Associate Transfer Partnership degree was brought up during the discussion, questioning whether or not it was the same as the Pathway Degree. While Pathway Degrees may be good for block transfer the concern is that the curriculum is not always updated by the universities. One criticism raised is that the AGEC transfer guide is not clear enough about the various AGEC's and they take a lot of time. Some of the participants recommended the used of university "checklists" instead of the AGEC's. More education regarding the Pathway Degrees was encouraged, with listservs, blogs and bulletins mentioned as being potentially helpful communication tools.

The Common Course Matrices were used by most of the advisors to see what courses will transfer to the universities; however, there were concerns expressed about how helpful it really is. The matrices are most helpful for students who are not sure about where they're going to transfer.

Several suggestions were offered relating to the common course matrices including the following:

- Make them easier to find on the web site.
- Redesign the web site for the common course matrices.
- Make the information easier to print from the web site.
- Provide better communications.
- Provide advisor training about the matrices.
- Have advisors train students about the matrices.
- Provide check sheets for students.

Some suggestions regarding the transfer process in general relate to training, both for students and advisors. A need for student orientation and introductory college prep classes was suggested by several focus group participants. Improved communications, including via email, was mentioned as a needed component in the transfer process. Other suggestions (not necessarily consensus suggestions) included a more readable transfer guide, blending the three AGEC's into one, improving the web site, maintaining current curriculum updates, resolving problems associated with students taking extra courses, and a better flow of information. It should be noted that the advisors' opinions of the Course Applicability System (CAS) website varied widely. People identified different sections that they found useful or not useful, while one

advisor commented that she "finds the website very easy to use and very helpful." Most people felt that the website could be used as a central point of contact for communicating the many changes that take place in curricula and administrative policies that impact advising.

Along with communications, consistency was a recurring theme during the focus group. However, difficulties seem to be inherent as a result of differing and changing curricula at the University level. The tone of this focus group was quite different than that comprised of university advisors. While both groups were engaged, the community college advisors' group expressed a sense of frustration related to what they perceived to be the inconsistencies caused by the frequent changes that take place at the university level and the lack of communications about those changes. With some exceptions, there seemed to be a feeling that there was better communications between the Pima CC District and the University of Arizona than between the Maricopa CC District and Arizona State University. As one advisor commented, "When they [UA] decide something that's communicated in a week, with ASU we find out in six months." It is important to keep in mind that despite the criticisms offered by this group, the main structure of the transfer system is not an issue, but rather the many situational aspects they have to deal with as a result of both the institutional changes and diverse student body.

C. Admissions and Registrar Staff Focus Group

The student transfer experience was perceived as seamless from the perspective of admission and registrar staff who participated in the focus group study. While the AGEC is seen as a helpful tool for students, degree audits and credential evaluators are seen as tools for administrators. While students may find the AGEC useful for planning, many of the students may not know what it is or its purpose.

One of the ways in which the AGEC can be helpful is for older students who can't find old high school records—if they're not admissible to a university they may be recommended to get an AGEC for easier admissions via transfer. Some of the focus group participants referred to a correlation of the AGEC certification with better GPA's at the university to which AGEC students transfer.

Focus group participants mentioned some concerns about the AGEC that were not necessarily shared by the whole group. For example, one person said community colleges may actually lose students if they focus on the AGEC because once they acquired the needed 35 credits for the AGEC they might transfer before completing the 60 credits required for an associate's degree.

Other issues mentioned by focus group participants include the following:

- For admissions to a university, if the AGEC isn't documented on the transcripts they are treated similar to new freshmen and have to go through the entire admissions process.
- The location of the AGEC certification varies.
- Certification looks different on each transcript and sometimes they simply say "AGEC"; a suggestion would be to have a clearly stated AGEC completed with a date.
- The AGEC in progress is also a problem—if a transcript is sent before the AGEC is completed, universities may not consider it in the student's transfer process. For instance, ASU will only act on it if it is to be completed in the same semester.
- AGEC certifications are only posted once a month, which causes another delay in the process for students.

In a discussion of Pathway Degrees a common expression was that the AGEC is much more common and a better tool for most transfer students. The Pathway Degrees were referred to as being too numerous, not advantageous to the students, too specific, not well documented and antiquated. One person said that when students switch majors from a Pathway Degree they end up taking extra classes, and said the focus should be on which school the student is going to rather than on the major. The idea was that the student would be better served by knowing what that particular institution would or would not accept.

Because of high turnover among advisors, as well as on-going changes in curriculum, advisors often don't have the training focus group participants said they need. They were also critical of the course equivalency guides not being updated. Advisor training and improved communications of curriculum changes were among the suggestions offered. Specifics regarding the training and communications usually focused on electronic means such as web-based learning and communicating. The group agreed that regular meetings of representatives from all the campuses would be helpful in facilitating solutions to transfer problems. In general, the participants in this focus group were satisfied with the overall system, while acknowledging there was some room for minor adjustments. They agreed that certain problems stemming from different student records computer systems at different institutions would require extensive work that was not likely to occur.

D. Articulation Task Force Members Focus Groups

1. ATF Members – Community Colleges

When asked to describe a successful student transfer experience, the major theme expressed by the participants in the community college ATF focus group was that of a transparent connectivity that would enable students to move through the system. However, as one participant noted, "I think it's almost imperative in what we do that

we're not going to hear the good stories. They may hear that at the universities, but we don't know if it's good or bad until it's all done." Others agreed that they usually don't hear about successful experiences; most people come back to them if there are problems.

Regardless of the topic being discussed in this focus group, the discussion virtually always returned to an over-riding theme that community colleges were not part of the power structure in the decision-making process. "The ATF's worked when we first started," commented one participant, "we got common numbers and common titles and some common course concepts back in the 1980's and it worked great. [since then] The universities have gone their own three separate directions and we can't deal with that now." This comment was representative of numerous references reflecting a general sense among the ATF members that their input was not being used by the universities. While the role of the ATF is seen as the common round table to promoting common articulation, the focus group participants see the community colleges being left behind while the universities make decisions at the institutional level and sometimes send lower-level representatives to meetings to "announce" the changes, with no opportunity for dialogue.

In talking about the AGEC, the group agreed that the concept is good and that it is good for a block transfer of credits. However, while the concept is good, many felt that there are problems with implementation. According to one ATF member, an underlying transfer-related problem is that faculty are confused by such things as there being too many AGEC's and that they are not being implemented consistently due to the many exceptions made at institutional levels. Additional problems come at the next level, beyond the 35 credits – that is when the numerous program requirement changes, and humanities, math and institutional diversity requirements come into play.

A difference in cultures between the community colleges and the universities was cited as a basis for some of the transfer-related problems. "We just want to take care of students" stated one participant when comparing community colleges to universities with concerns about prestige and research. The mathematics requirements implemented at ASU was cited as an example, with many programs creating discipline specific courses for undergraduates. Even though the university finally accepted the community college mathematics course, it results in community college students coming in under-prepared because the community colleges can't offer all the variations of mathematics courses. This leads to a perception that the universities are moving away from the concept of general education in the first two years, which ultimately impacts the AGEC.

Focus group participants had mixed views on Pathway Degrees, with some people saying they work and others saying the system is broken. Most of the participants see the Pathway Degrees being useful for some students but not for others. The education track was cited as an example that worked extremely well. It was noted that for

students who stick with their initial academic plans, the Pathway Degrees work well, with students finishing on time; but any change of plans might extend their education beyond four years. One person said the Pathway Degrees work better in the large districts because of the availability of classes. Several people said there are too many of Pathway Degree options, with seven just in psychology alone.

There was some confusion in the discussion about the Pathway Degrees, with Associate of Transfer Pathway Degrees (ATP) sometimes being discussed as the same thing. Some of the problems associated with the Pathway Degrees might actually relate to the ATP's which are articulated partnerships for certain programs at certain colleges and universities. Originally promoted by advisors as a way to tailor programs to fit students, ATF members feel the ATP's add complexity to what some described as the "most complex articulation system in the country." One ATF member suggested that the system go back to the basic AA and AS degrees.

A frustration expressed by the focus group participants regarding the Common Course Matrices was the lack of consistency. For example the community colleges provide course descriptions while the universities don't. A major problem from the community college perspective is that when issues related to the CCM are discussed at the ATF meetings, the universities go back to their campuses and ultimately do what they want with their courses and frequently don't inform the community colleges. What was discussed at the meetings many times isn't what shows up on the website (if it shows up at all).

The discussions of the AGEC, Pathway Degrees and CCM frequently led to issues related to advising. Many faculty don't like to do advising, especially with the difficulties in keeping current with frequent changes in programs at the universities. While universities have program specific advisors, community college advisors need to know about all programs at all three universities. This issue is compounded by the high turnover among community college advisors

Among the suggestions made to help alleviate some of the transfer problems were the following:

- Make program decisions in consultation with community colleges.
- State minimal competencies for the same courses across the state.
- Revise the common course descriptions so they are consistent.
- Work together more closely on all transfer issues.
- Improve internal communications.

One of the participants said a basis for some of the problems is the nature of the organizations involved, i.e., while community colleges have transfer staff, they are separate from advising; whereas, transfer people at universities are usually administrators and their advisors are usually faculty members. Another participant suggested that if the system is to work as intended, then faculty (with an emphasis on

faculty) at the community colleges and universities need to work together so students see the system as one institution. This idea was complementary to an earlier discussion in which participants questioned whether or not one university was really interested in transfer students anymore.

While the other focus groups acknowledged there was room for improvement in the transfer system, this group felt the "system was broken . . . with structural changes needed at the state level, the legislative level, the regents level and if there were a state board of community colleges, it would be needed at that level." It should be noted that the community college ATF members were extremely passionate in their views and very pointed in their criticism of the universities whom they see as being condescending and non-responsive. However, as one participant noted in her closing comments, "this is not even a right or wrong issue, it's about mass confusion, and the students who are being hurt."

2. ATF Members—Universities

While university ATF members see the ATF groups as generally helpful, they acknowledge that community college ATF members are not always in agreement with their university counterparts. Many of the issues faced by ATF groups are specific to their academic departments. All of the focus group participants value the opportunity provided by the ATF's to bring together both university and community college people interested in better serving their transfer students, "…so the left hand's talking to the right hand. It's worked well over the years, it's worked real well. In some years you don't get as much done, it requires change over the years," according to one of the focus group participants. However, one person said he had never seen a community college advisor at an ATF meeting, and another said community college advisors need to understand university issues and the different programs at different universities. Another person said, "The networks we develop help a great deal in assisting students." "The actual articulation work is free-ranging and discusses anything that might involve articulation…" said one respondent. "I think the process generally works well; the process doesn't always guarantee that the players play nicely—that's usually where the problem comes," another person said.

One of the focus group participants said, "Before the AGEC got established… it was very difficult for the advising staff to figure out which courses would count…(at the universities)…it was a very piecemeal thing…now we trust the transfers they bring to us and we accept them." Another comment on the AGEC was, "we do our best to recommend to all students that they get that done…because they come in and we don't have to worry about the rest of it and we can focus on their major and minor…so I just think that's been really a good move."

The AGEC is viewed quite favorably by most of the focus group participants, although problems were acknowledged. For example, the case was described whereby a student who got an AGEC at two community colleges did not have the AGEC show on a

transcript because the two community colleges didn't work to "certify" it. Out of state transfers were also more likely to be problematic in certifying the AGEC.

One participant expressed a concern about a perceived "…disconnect between advisors and curricula at the three universities…students will be lulled into believing that when they come into engineering with an AGEC that they have only two more years left in their engineering program and it's significantly disappointing to students when they find out that they're barely close (with usually three years left)."

Some university ATF members consider community college advising to be a volume issue—with too many students needing "major-specific" advising. Infrastructure is also viewed as an issue at the community colleges, where there is little in the way of an admissions structure; whereas, once transfer students come to the universities they face the admissions process.

Focus group participants expressed several areas of confusion regarding the Pathway Degrees program and associate degrees. For example, with seven business degrees at ASU and others at NAU and UA, the A-Bus guarantees that all transfer credits will be accepted but admission to the universities is still an issue. Lack of flexibility in the curriculum is also considered a problem. Another concern is that some programs emphasize getting associate degree while some focus on courses. And one person said that lots of people don't know about the actual terminology "Pathway Degrees."

Participants in the ATF focus group generally consider the common course matrix as providing useful, clarifying information that provides community colleges with knowledge about what courses will transfer, what programs have prerequisites, etc. However, it was acknowledged by some that developing common courses can be a top down process from the universities, with the community colleges having to adapt.

Most of the participants indicated that the usefulness of the common course matrices is dependent on the major involved. However, there was consensus within the group that keeping the common course matrices up-to-date is a problem. While some of the focus group participants expressed satisfaction with the associated website, there was considerable discussion focused on the need to improve the usability of the website.

One person made the following comment on the common course matrices: "If we try to make any changes to them it is very, very difficult." Another focus group participant said, "I would characterize it more as time consuming in that you just have to plan ahead; if you want to change a 200 level or 100 level course you're going to have to allow time to inform the community colleges, allow them time to see how that impacts their courses, and then have discussions, so you're adding a year to a year and a half to the discussion to figure that out."

The role of the ATF's varies by academic major, and perceptions of how helpful they are is likewise dependent on the major. There was consensus among the focus group participants that having community college and university interaction within the ATF's is important and helpful, not simply for networking and getting to know each other, but also to facilitate discussion of curriculum development and other serious issues affecting both kinds of institutions, and all transfer students. The tone of this focus group was in a sense one of appreciation for the difficulties community college personnel face in helping their students transfer; however, the university ATF participants seemed to be relatively satisfied with their situation.

E. Community College Student Focus Groups

A series of focus groups were conducted, on-site and via tele-conference, with Arizona community college students attending school in the Pima Community College District, the Maricopa Community College District and the rural community colleges. Students were in various stages of transferring to universities, most headed to either the University of Arizona (UA) or Arizona State University (ASU). There were also a few students transferring to Northern Arizona University (NAU).

Students from the Pima Community College District focus group were enrolled in the STU210 class which resulted in a more highly informed group of students. All of the students said the class has been very helpful. "I just love this class," one student exclaimed. "I now feel like I'm part of the U of A just by going once a week; I feel like I know where to go if I need help," said one student. Another said, "Through this class I've been shown there are just many, many resources, of people you can call, websites that I never would have known existed if I hadn't taken this class. There's help out there, you just have to know where to get it." Several students said that if the information they've received has been so helpful then that information should be made more accessible to all students, whether or not they take the class. One of the special perks for taking the class was that Pima students were allowed to go through the UA orientation and registration at same time as regular UA students.

Community college students had mixed views on the benefits of the AGEC. Most of the Pima students did not know about AGEC before taking the class. A few of the students from other community colleges knew about the AGEC, but mostly just understood the main concept of it meeting general education requirements. One student said, "I think everyone should just be more informed about it. AGEC itself isn't necessarily a good or bad thing, it's everyone's interpretation of it that sends you in circles, or gets you right on the mark...everyone should definitely be more informed of it so that everyone can work with it and get it right and say (for example), okay AGEC's not good for you, or, for this degree you don't really need this many general education credits, or, you don't want to do the AGEC because your emphasis is in engineering, or, the AGEC is perfect for you because what you're going for requires all of these credits anyway. ... It's the

misinformation or target information that determines how well or how crappy the whole AGEC experience turns out."

A number of students were in programs with very regimented curricula (e.g., nursing, social work) so they were not concerned about meeting AGEC requirements. In these cases the students met with an advisor at the very beginning and had their coursework laid out for them; one student in nursing did it herself, following the information on a website. The community college students were not overly concerned about following a formal path to achieve an AGEC. One older student who had completed an A.A. degree years ago said it was now "not good for anything...only 10 credits counted." The student begrudgingly understood that over time the requirements had changed considerably. One issue that surfaced in two different focus groups during discussion of the AGEC, was perceived pressure from community college advisors to complete an associate's degree even though it appeared to students that it would not benefit them. The two students raising the issue were in engineering and pharmacy.

Very few students had heard of either the Pathway Degrees or Common Course Matrices. One nursing student and one engineering student thought they were in a pathway degree program. However, community college students were aware of the course equivalency guide, some learning about it from fellow students and others being directed to it by advisors. Most felt this was one of the most useful resources in the transfer process.

Accurate information and communications were recurring themes as students talked about their experiences with the transfer process. Students mentioned inconsistencies among advisors in terms of how they interpreted the courses that would or would not transfer to the universities. Many students said the community college advisors were well-versed on issues related to their own community college, but were not very knowledgeable about what happens at the university level – and sometimes not even about other community colleges. One student put the advisors' position in perspective with his observation that, "They want to do what's best, I'm sure, but they're people...and you can't expect them to be helpful for every student who comes in."

Several of the students attending rural community colleges felt that their advisors were quite knowledgeable, especially about NAU. One Yavapai student commented on her positive transfer experience (so far) saying that, "The advisors know a lot about NAU because of the satellite office at Prescott." This group of students also mentioned visits by UA outreach personnel and the availability of on-line counselors at UA that helped in their transfer activities.

Most of the students considered the two larger universities to be very bureaucratic. Community college students who had experiences with NAU (most of them from rural colleges) felt that NAU was "user-friendly." Many of the students said they felt it was better to start at a community college and then transfer to a university. One said, "With

community colleges it's more of a one-on-one basis. If you go to the university you definitely won't find as much help, and at community colleges you can go to your advisor and you don't have to schedule appointments." However, there were a number of students who had specific situations where they did not find the help they needed at a community college and did find someone to work with at the university. For example, one student said, "I've had really wonderful (university) advisors over there ; I've emailed them and they see me within a day or two, so as far as advising over there I have absolutely no complaints whatsoever. And at my colleges...they're just really friendly and I haven't had any bad attitude, yet."

Students had a number of suggestions they felt would help out in the transfer process, including the following:

- Establish a web site dedicated to transfer student issues, particularly some kind of degree audit that would show how courses, particularly AGEC, would impact the course requirements for academic majors.
- Make the transfer class available on-line.
- Create an orientation program that is available on-line.
- Improve communications between "everybody."

It should be noted that many of the community college students are making their way through the transfer process on their own, utilizing friends and websites, with minimal contact with advisors. While maybe not representative of the majority of students, one student attending a rural community college commented that she "thought it (the transfer process) would be more stressful. It's actually been pretty easy."

F. University Student Focus Groups

The transfer experiences of students who had successfully made the transition from a community college to a university are difficult to generalize. They varied by age, location and educational paths. For instance, all of the University of Arizona (UA) transfer students were familiar with the AGEC and all but one had completed an AGEC while at a Pima Community College campus. However, only a few of the students who transferred to Northern Arizona University (NAU) or Arizona State University (ASU) had heard much about the AGEC, with one completing an AGEC-B as part of the transition from the Maricopa Community College District to ASU. Older students who had "stopped out" for a number of years found that the AGEC was not useful because many of the courses they had taken previously did not fit into the AGEC, but could still be accepted for transfer. Most of the students transferring to NAU completed an associate's degree before transferring.

None of students were in a Pathway Degree program, and only a few were familiar with what it was. One student had seen it described on a website but commented that "it didn't seem to fit what I was doing." Many students had gone to a web site and

looked at the Common Course Matrices; however there seemed to be some confusion between the matrices and the course equivalency guide mentioned by many students. They were quite familiar with the course equivalency guide and that was a tool that they used frequently. One of the concerns raised about the Common Course Matrices was that its changing nature made it difficult to understand. One of the focus group participants said, "You sort of don't figure it out until later at a community college, sometimes when it's too late."

Overall, students were not very knowledgeable about the AGEC, Pathway Degree programs or the Common Course Matrices. The few students who were familiar, or who had least heard of the various components, were those who had participated in the transfer strategy class in their last semester at Pima Community College (STU210). They felt the class was one of the most beneficial aspects of the transfer experience. Several students suggested having a class like this at all schools, some thinking it should be mandatory. Most students agreed that the class would be helpful, but they did not think it should be mandatory.

While many of the students understood the value of the AGEC relative to it meeting general education requirements, it seemed that they still did their planning more on an individual course basis. One AGEC-related problem mentioned by the students involved their perception that AGEC's and university requirements for graduation changed every year.

In planning for their transfer from the community college to a university, most students waited until their last semester to check on many of the details involved. Most students did not see an advisor at the community college level on a regular basis, but only when required or needed. Many students reported having little contact with an advisor, using websites and checklists to stay on course. Most students agreed that there was a difference between advisors at the community colleges and universities.

One NAU student described how advisors at the community colleges and at the universities differ in their respective situations. She said that in dealing with "…advisors at the university level,…you've already decided on a major; you have a direction, and that advisor knows exactly what classes you need for the major you've chosen. The few times I did talk to an advisor at the community college level, I … got the feeling that they're dealing with so many people and so many different programs. or they all want to go into totally different majors at the three universities, and people are kind of wishy-washy about exactly what major they want to go be in—so I felt like they were not as able to really get down to what exact classes I needed because it's probably more of a daunting task to understand all the different majors and all the different requirements at the three universities."

Similarly, participants in the UA focus group said they found the community colleges to be more student-friendly than UA in trying to help them transition to the university but

the university advisors were more knowledgeable. One person said that students at UA "…have an on-going relationship with their advisor, but there's still that sort of disconnect… they'd rather be doing something else… the advisors at Pima are so accessible and friendly but you just see them once a semester and they just don't have all the information you need."

These comments are somewhat representative of comments made by students from all three universities; however, there were also some specific situations in which students did not feel that the university advisors were knowledgeable even though they were "in the field." Some of these situations dealt with transfer issues of courses previously taken, rather than planning for future courses.

The lack of knowledge about transfer issues extended beyond advisors for the group of older students previously mentioned ("stop-outs"). Some of these students had transcripts from multiple colleges or from universities and encountered problems transferring credits to community colleges to "get their GPA's up" or "to get a fresh start." For these students it seemed they encountered problems at each step in the process, including admissions, transcript evaluations and registration. Their biggest complaint was that there were a number of issues that were not identified or explained early in the process, creating problems later on resulting in having to delay a sequence of classes or taking additional classes. One student transferring to ASU stated that, "They told me I had to get my GPA up because of my problems 10 years ago; but they didn't tell me I could only start in the summer or winter sessions to do this. This delayed my entry to school for a semester."

While the students transferring to UA felt that there was some organized institutional support for transfer students, students from all three universities generally felt there were a number of things that could be done to enhance the transfer process, including the following:

- Hold an orientation day for transfer students.
- Create a transfer center or a space for transfer students to gather or "hang out."
- Have a general advisor to serve as a quick stop for a single question.
- Have a person at the community colleges advise for one major—a major-specific person.
- Establish a web site devoted to transfer student issues, and advertise about the existence and utility of the web site.
- Set up a transfer student advising blog.
- Establish a link between the community college web sites, the transfer guide and course equivalency guides.
- Hire a transfer student ombudsperson or mentor.
- Establish transfer student representation within the student governance apparatus.
- Provide a list of advisors, including the area they advise.

- Improved communications.

Communications was a theme that was repeated throughout the student focus groups. As one student said, "I think there are definitely some communications issues between the community colleges and the university. I think if they would just start talking a little more and be on the same page it would help everybody."
Improved communications between the community college campuses was also a suggestion the students made. While the community college advisors were seen as very student-focused, the consensus was that they need to be more knowledgeable about programs at the university. And the consensus concerning the university was that they need to take more responsibility in addressing the particular needs of transfer students.

It should be noted that many of the students reported maneuvering through the transfer system on their own, using the websites and printed resources, making contact with institutional personnel at key points in the process when necessary. The system appears to work well for students who know exactly what they want, are pursuing educational paths that have some flexibility in courses or who have found a "caring" person with whom they can use as a resource – especially in the university setting. As one student said, "I just kept going from person to person until I found someone who would help me." This same student also felt that this was not the best way to do things.

ASSIST Student Data Analysis Findings

Since the sample is so large, even small effects may achieve statistical significance. Although in our analysis we retained only those variables that were in fact significant predictors of the outcomes, in our summary below we focus on the substantive significance of the findings.

A. Time to Graduation

For this analysis, we modeled (separately) the four outcomes of graduation within two years, three years, four years, and five years. Since these outcomes are dichotomous (Yes/No), we used logistic regression to test the effects of the transfer degrees and other variables on the likelihood of graduating within the specified time frame. As before, we removed non-significant predictors from the model after the first run.

Logistic regression models the likelihood of a dichotomous event (graduation, death, whether someone voted, etc.) as a function of a set of predictor variables. The purpose of the analysis is to see what variables, or combination of variables, might increase or decrease the likelihood of the event taking place. The results of the analysis are interpreted in terms of the relative odds of the event taking place given a unit change in the categories or values of the predictor variables. The relative odds, or *odds ratio*, is one of the key outputs of the analysis and can be seen in the second column of the tables below. Odds ratios greater than 1 indicate an increased likelihood of the event occurring. For the following analyses, we are interested in seeing whether possession of any of the degree combinations results in an increased likelihood of graduating.

In the tables below, the three degree/certificate categories (AGEC only, ASSC only, and AGEC and ASSC) are interpreted with reference not to each other but rather to the "Neither" category (no degree or certificate, just transfer credits). Note that the "Neither" category does not appear in the table. Likewise, for the university variable, ASU is the reference category to which NAU and UA are compared, and thus ASU does not appear in the table. The final categorical variable, Gender, is coded 1 for females and 0 for males. This makes males the reference category, and indicates that positive relationships between Gender and the outcome variables indicate advantages for females, and negative relationships between Gender and the outcome variables indicate advantages for males.

1. Graduation within two years

Table 1 below represents the final model for this analysis, in which entry semester and ethnicity were dropped as non-significant. Note that numbers greater than 1 in the Effect column indicate an increased likelihood of persisting, while numbers less than 1 indicate a decreased likelihood. Starred figures are statistically insignificant effects for individual categories of group variables (degree configuration and university).

Table 25. Two-year Graduation

Variable	Effect on Likelihood of Graduating
AGEC only	1.44
ASSC only	.94*
AGEC and ASSC	1.28
Total trans hrs/3	1.23
Entry Year	.94
Entry Age	1.04
Gender	1.44
NAU	.95*
UA	.66
Avg earned sem hrs	1.91

Note: The reference category (the category that doesn't appear in the table) for the degree/certificate variables is "neither," for Gender is "male," and for the university variables is "ASU."

Impact of AGEC and Associates Degrees

As noted above, the three degree categories are interpreted with reference to having no degrees, not to each other. For the first three rows of Table 1, figures in the final column represent the odds of graduating with a baccalaureate degree—in two years—compared to the reference category (here, the lack of any community college degree). For instance, Table 1 shows that students possessing an AGEC degree are 1.44 times (an additional 44%) as likely to graduate in two years as students with only transfer credits. It also suggests that the Associates degree (AAS, AGS) by itself confers no advantage to students in terms of their likelihood of graduating within two years (the variable is not statistically significant, and the odds ratio is close to 1). Interestingly, it shows too that while the transfer pathway degree—AGEC plus Associates—does confer an advantage, this advantage is not as strong as that for students with an AGEC only. Students with both degrees are 1.28 times more likely to graduate within two years than students with no degree/certificate.

Total Transfer Hours

Students entering the university with more transfer hours also did better in terms of two-year graduation, not surprisingly. Based on the way this variable was coded, each extra course (or three credits) that a student brought to the university was associated with an increase of 1.23 in the odds of graduating within two years.

Entry Year

According to Table 1, there is an inverse relation between cohort year and the likelihood of graduating within three years (the odds ratio in column 2 is less than one). In other words, later cohorts appear to be somewhat less likely to graduate within two years than earlier cohorts. According to the table, each successive cohort is about 94% as likely to graduate within two years as the one before, holding other variables constant.

Gender, Ethnicity, and Age

As noted above, ethnicity was a non-significant predictor and was dropped from the model. Gender was a strong predictor of two-year graduation rates. Women are almost one and a half (1.44) times as likely to graduate in two years as men, holding all other variables constant. Age at entry is also a significant predictor of two-year graduation. Since the unit is one year, the effect looks small, but given that 85% of students in our sample were between 19 and 25, it may be interesting to look at a comparison between those ages. A student who entered at age 25 is 1.23 times (or 23%) more likely to graduate in two years than a student who entered at 19. (Note: this is a calculation that does not appear in the table; the effect in the table—1.04—is for age increments of one year.)

University effects
Statistics for university effects are interpreted with reference to ASU (the category that doesn't appear in the table). According to Table 1, UA students are about 66% as likely to graduate in two years compared to ASU students, holding all other variables constant. The likelihood of NAU students graduating within two years is not significantly different than for ASU students.

Average earned semester hours
As with the previous analyses of transfer hours, a student's average earned hours is a strong predictor of two-year graduation—again, not at all surprising, since credits are required to graduate. As noted above, this variable is in some sense a measure of full-time/part-time status, averaged over the time period in question. Table 1 shows that each additional earned hour is associated with a 1.91 increase in the odds of graduating within two years. However, the point of including this variable is not so much to interpret it—it's bound to be influential—but so that we can have more confidence in the effects for other variables, such as the transfer degrees.

2. Graduation within three years

Table 2 below represents the final model for the analysis of graduation within three years. Here, no variables were dropped as insignificant. Again, starred figures are statistically insignificant effects for individual categories of group variables.

Table 26. Three-year Graduation

Variable	Effect on Likelihood of Graduating
AGEC only	2.19
ASSC only	.99*
AGEC and ASSC	1.39
Total trans hrs/3	1.19
Entry Semester	.84
Entry Year	.92
Entry Age	1.04
Gender	1.61
Ethnicity	1.14
NAU	.95*
UA	.73
Avg earned sem hrs	1.81

Note: The reference category (not appearing in the table) for the degree/certificate variables is "neither," for Gender is "male," and for the university variables is "ASU."

Results are generally similar to those for the previous analysis, although the effect for AGEC only and AGEC and ASSC have both increased. Students with an AGEC (only) are over twice (2.19) as likely to graduate within three years as students with no community college degree/certificate. Students with both AGEC and ASSC are 1.39 times, or 39%, more likely to graduate within three years than students with just transfer credits. The effect for an Associates degree (only) is comparable to the previous results, as are the effects for university. According to the table, there is again a slight effect for entry year, in that later cohorts appear to be somewhat less likely (92%) to graduate within three years than earlier cohorts. Entry semester shows an effect in this analysis as well. Coded 0 (spring) and 1 (fall), the table indicates that students who entered university in the fall are 84% as likely to graduate within three years as students who entered in the spring. In this analysis also, ethnicity is modestly related to graduation time. White students are slightly (14%) more likely than non-white students to graduate within two years.

3. Graduation within four years

Table 3 below represents the final model for the analysis of graduation within four years. Entry year, entry semester, and ethnicity were all dropped from the model. Starred categories are statistically insignificant effects for individual categories of group variables.

Table 27. Four-year Graduation

Variable	Effect on Likelihood of Graduating
AGEC only	2.31
ASSC only	.80*
AGEC and ASSC	1.13*
Total trans hrs/3	1.12
Entry Age	1.02
Gender	1.38
NAU	.83*
UA	.78
Avg earned sem hrs	1.82

Note: The reference category (not appearing in the table) for the degree/certificate variables is "neither," for Gender is "male," and for the university variables is "ASU."

Results are very similar to previous analyses. Possession of an AGEC remains a strong predictor of graduation within four years, and the general pattern of influence for the other variables is similar to previous patterns (although the AGEC plus ASSC combination is now insignificant). Women, older students, and students attending ASU are all more likely to graduate within four years. Of course, students with more entry credits and students earning more credits per semester at the university are also at an advantage.

4. Graduation within five years

Table 4 below represents the final model for the analysis of graduation within five years. In this analysis, age, ethnicity, gender, entry semester, entry year, and university have all been dropped as non-significant.

Table 28. Five-year graduation

Variable	Effect on Likelihood of Graduating
AGEC only	2.57
ASSC only	.87*
AGEC and ASSC	1.08*
Total trans hrs/3	1.09
Avg earned sem hrs	1.86

Consistent with previous findings, possession of an AGEC (only) remains a strong predictor of five-year graduation, relative to having no earned degrees. Other degree combinations (ASSC or AGEC and ASSC) provide no advantage for graduating within five years. Entry credits and average university semester credits also remain influential and positively related to graduation. At five years, however, all other variables have dropped to insignificance.

Summary

The above analyses identify a set of variables that consistently—and independently--impact the likelihood of graduating within any time frame, with some small variations from analysis to analysis. Students with an AGEC (only) or AGEC plus Associates, women, older students, students with more credits at entry, students who take more university credits, and ASU students all do better in terms of time to graduation. Possession of an Associates degree (only), however, proved to confer no advantage over having no degree or certificate. In some analyses, but not all, earlier cohorts did better than later cohorts. Note that the separate analyses for two-year, three-year, four-year, and five-year graduation are not independent of each other, as students who graduated within two years are also coded as having graduated within three years, four years, etc.

We conducted some additional analyses to investigate the apparently unusual finding that AGEC-only students are more likely to graduate in a timely fashion than students with an AGEC plus an Associates degree. To begin with, we ran the model for two-year graduation with no variables in the model except those representing the possible degree configurations. This model gave the following odds of graduating relative to having no degree of any kind:

AGEC only	1.44
ASSC only	1.24
Both	1.89

These figures would suggest that although an AGEC confers a strong (about 44%) advantage over transfer credits only, both AGEC and Associates together seem to give the strongest odds of graduating within two years, relative to having no degree at all. Experimenting with various combinations of predictors, it became clear that transfer hours and average university semester hours (a full-time/part-time proxy) were the key variables. Controlling for those variables led to the findings summarized above—i.e., the primacy of the AGEC degree. In other words, incoming credits of any kind are more important than whether those credits are configured in a degree such as an Associate's, particularly once a student has earned an AGEC and enrolls full-time at the university.

In sum, students who earn an AGEC and transfer with a lot of credits—but who don't get the Associate's degree—and who enroll full time at the university stand the best chance of graduating in a timely fashion. As noted above, it also helps to be female, to be an older student, and to be attending ASU.

B. Retention Rates

Initially we attempted to code persistence in terms of a student's completing at least some credits in a given semester, not just enrolling. However, with skipped semesters, the transposed data simply shows figures for the next semester of enrollment (the 5th), whether those were consecutive semesters or not. Given this situation, we decided to

use the existing persistence variables in the dataset, which code for enrollment as of the 21st day of the spring or fall semester (depending upon semester of entry).

1. University enrollment after one year

Table 5 below represents the final model for one-year persistence, in which gender, ethnicity, entry semester, and entry year were dropped from the analysis as non-significant.

Table 29. Persistence after One Year

Variable	Effect on Likelihood of Persisting
AGEC only	1.51
ASSC only	.69
AGEC and ASSC	1.01*
Total trans hrs/3	1.04
Entry Age	1.02
NAU	.69
UA	1.10*
Avg earned sem hrs	1.34

Note: The reference category (not appearing in the table) for the degree/certificate variables is "neither," for Gender is "male," and for the university variables is "ASU."

Impact of AGEC and Associates Degrees

In keeping with results from previous analyses, Table 5 shows that possession of an AGEC degree is associated with an increased likelihood of persisting into the second year of university. Students with an AGEC (only) are 1.5 times as likely to be enrolled after one year as students with just entry credits, holding other factors constant, while students with an AGEC and Associates degree are no more likely to be enrolled after one year than students with no degree at all. Interestingly, students with an Associates degree (only) are *less* likely (69% as likely) to be enrolled after one year than students with no degree at all.

Total Transfer Hours

Students entering the university with more transfer hours are also more likely to be enrolled after one year—about a 4% advantage for each additional course (or three credits) that students come in with.

Age at entry

Age has a slight influence on persistence. Continuing our earlier example comparing students aged 19 and 25, the latter would be about 10% more likely to enroll after one year than the former. (Note: this is a calculation that does not appear in the table; the effect in the table—1.02—is for age increments of one year.)

University effects

One of the university variables shows a significant effect. Holding other variables constant, NAU students are less likely (69% as likely) to be enrolled after one year than ASU students.

Average earned semester hours
Here, we see that the more hours students earned in year one, the more likely they were to be enrolled after year one. Each additional hour earned in year one was associated with an additional 34% chance of enrollment after one year—a very strong effect.

2. University enrollment after two and three years

For the analysis of two-year persistence and beyond, we have to be aware of a possible change in interpretation of the results. Variables that predicted graduation and one-year persistence—that is, positively influential variables—may become negative predictors of two and three year retention, since successful students may have graduated after two years and thus appear in the dataset as non-persisters. In the two-year and three-year analyses, therefore, we eliminated graduates and looked for predictors of persistence only among the pool of non-graduates.

Table 6 below represents the final model for two-year persistence, in which gender was dropped from the analysis as non-significant. As before, starred figures are statistically insignificant effects for individual categories of group variables.

Table 30. Persistence after Two Years

Variable	Effect on Likelihood of Persisting
AGEC only	1.35
ASSC only	.92*
AGEC and ASSC	.90
Total trans hrs/3	1.02
Entry Semester	.71
Entry Year	.37
Entry Age	1.01
Ethnicity	.85
NAU	.71
UA	1.01*
Avg earned sem hrs	1.28

Note: The reference category (not appearing in the table) for the degree/certificate variables is "neither," for Gender is "male," and for the university variables is "ASU."

Table 6 shows that for those who haven't graduated within two years, students with an AGEC (only) are 1.35 times or 35% more likely to persist into the third year than students with just entry credits. Students with a transfer degree—both AGEC and Associates—are less likely (90% as likely) to persist into the third year as students with no degree at all. Other positively influential variables for persistence after two years include transfer hours, age, and average semester credits at the university. Students

with more transfer hours, older students, and students earning more university credits are all more likely to be enrolled in the third year following initial enrollment.

Table 7 below represents the final model for three-year persistence, in which gender was dropped from the analysis as non-significant. Note that, as before, numbers greater than 1 in the Effect column indicate an increased likelihood of persisting, while numbers less than 1 indicate a decreased likelihood. Starred figures are statistically insignificant effects for individual categories of group variables.

Table 31. Persistence after Three Years

Variable	Effect on Likelihood of Persisting
AGEC only	1.093*
ASSC only	.716
AGEC and ASSC	.865*
Total trans hrs/3	.974
Entry Semester	.664
Entry Year	.339
Entry Age	1.013
Ethnicity	.822
NAU	.678
UA	.789
Avg earned sem hrs	1.272

Note: The reference category (not appearing in the table) for the degree/certificate variables is "neither," for Gender is "male," and for the university variables is "ASU."

Table 7 shows that for students who haven't graduated within three years, the only positive predictors of persistence are age at entry and average semester hours earned at the university to date. Students with an AGEC or AGEC plus Associates are no more likely to persist after three years than students with no degree at all. Students with an Associates degree only are *less* likely to persist after three years than students with no degree at all.

Summary

The above analyses identify a set of variables that impact persistence as measured by enrollment after the first year, the second year, and the third year following initial enrollment. However, as noted, persistence after one year and persistence after two and three years may be qualitatively different outcomes, so the latter analyses were conducted only on non-graduates to date.

If we consider the key analysis as the one that looks at persistence after 1 year--since persistence after two years may mean non-graduation—then we can see that the AGEC (only) degree is a strong predictor of persistence, both compared to no degrees/certificates as well as to other degree configurations. Transfer hours and average earned semester hours (to date) are also strong predictors of persistence after one year. The finding that those with an Associates degree (only) are less likely to

persist than students with no degree at all is an interesting finding, and perhaps suggests that students with an Associates degree find it easier to drop out of the university because they at least have one credential.

C. GPA

We conducted linear regression analyses to determine whether students entering university through the transfer pathway degrees would have higher two-semester and four-semester GPAs than students who entered without this level of preparation. Other variables included in the analysis were total transfer credits, year and semester of entry, age at entry, gender, ethnicity, university attended, and average earned semester hours, which was used to represent a student's ft/pt status.

1. One-year (two-semester) GPA

For this analysis, year of entry was ultimately removed as it was not a significant predictor of student GPA. Table 8 highlights the outcome of the two-semester analysis. Positive numbers indicate positive effects. Starred categories are statistically insignificant effects of group variables.

Table 32. Two-Semester GPA

Variable	Effect on GPA
AGEC only	.148
ASSC only	.067
AGEC and ASSC	.124
Total transfer hours (in units of 3)	.017
Entry Semester	-.062
Entry Age	.021
Gender	.154
Ethnicity	.167
NAU	.007*
UA	-.108
Avg. Earned Sem Hours	.109

Note: The reference category (not appearing in the table) for the degree/certificate variables is "neither," for Gender is "male," and for the university variables is "ASU."

Impact of AGEC and Associates Degrees

Students entering university with an AGEC had significantly higher GPAs than students without. For example, all other things held equal, we would expect a student with an AGEC and no Associates degree to have a GPA .148 points higher than a student with no AGEC and no Associates. Entering with an Associates degree had about half as big an impact on GPA (.067 points). Possessing an Associates degree in conjunction with the AGEC provided no more value (.124 points above no degree/certificate) beyond that provided by the AGEC alone.

Gender and Ethnicity

Both gender and ethnicity had strong relationships to GPA – their impacts were the strongest of all of the variables. All other factors held constant, a woman's GPA will be .154 points higher than a man's. White students also have higher GPAs than minority students—the average white student will have a GPA .167 points higher than a similar student who is a racial or ethnic minority. Thus we would expect a white woman to have a GPA about .32 points higher than a black or Hispanic man with the same configuration of entry credits, age, entry semester, etc.

Total Transfer Hours

Students entering university with more transfer hours also did better, even when controlling for other factors like AGEC and ASSC degrees. Each additional 3-credit course a student entered with predicted a .017 increase in their 2 semester GPA. To put it another way, someone in the 25th percentile of transfer credits came in with 15 3-credit courses, while someone in the 75th percentile came in with 21 3-credit courses. All other things held equal, if our first student had a 2.0 GPA, we would expect the second student to have a GPA of 2.10.

Average Earned Hours (Part Time / Full Time Status)

One of the most powerful predictors of 2-semester GPA is a student's average earned hours in those first two semesters at the university – a variable that essentially represents a student's part time or full time status. The coefficient in our regression equation tells us that for each additional average earned hour of classes taken, we would expect a student's 2 semester GPA to increase by about a tenth of a point.

To further the example, a student in the 25th percentile in terms of average earned hours took an average of 7 hours in each of his or her first two semesters. A student in the 75th percentile took an average of 13 hours in those first two semesters. All other things held equal, if the first student who took an average of 7 hours had a 2.0 GPA, we would expect the second student who took an average of 13 hours to have a 2.65 GPA. Unfortunately, without access to students' grades from community college, it is impossible to know the reason why students who take more credit hours have higher GPAs. This could be because stronger students are the ones who feel comfortable taking a heavier course load. It could also be because other factors associated with going to school part time – perhaps that part-time students are also managing other responsibilities like a job or family – mean that part time students show lower academic achievement. Or it could be some combination of the two.

Entry Age

Entry age was a significant predictor of GPA, and students who were older upon entering university had higher GPAs than their younger counterparts. Given that 85% of students in our sample were between 19 and 25, the result is that we would expect a student who entered university at 25 to have a GPA .13 points higher than a student who entered at 19.

University and Entry Semester Effects
Note that UA students have significantly lower GPAs than their ASU and NAU counterparts – about a tenth of a point lower. Unfortunately, without data on students' level of achievement in community college, we are unable to determine whether this is a selection effect into the university or some effect of the university. In addition, for reasons that are unclear to us, students entering university in the spring semester have higher GPAs than students entering in the fall – students entering in the spring have GPAs .06 points higher than students entering in the fall.

2. Two-year (four-semester) GPA

The four-semester GPA analysis yielded results that for the most part mirrored those found in the two semester version. Table 9 presents the results of that statistical model. Positive numbers indicate positive effects. Starred figures are statistically insignificant effects for categories of group variables.

Table 33. Four-Semester GPA

Variable	Effect on GPA
AGEC only	.103
ASSC only	.027*
AGEC and ASSC	.093
Total transfer hours/3	.011
Entry Semester	-.044
Entry Age	.019
Gender	.174
Ethnicity	.147
NAU	-.003*
UA	-.116
Avg. Earned Sem Hours	.094

Note: The reference category (not appearing in the table) for the degree/certificate variables is "neither," for Gender is "male," and for the university variables is "ASU."

The only difference of note between the two-semester and four-semester statistical models is a slight shift in the nature of the relationship between AGEC, Associates Degree, and GPA. Once again, possession of an AGEC predicts higher GPA, although the size of that effect is slightly smaller at the four-semester mark. In addition, while at the two-semester mark it appeared that possession of an Associates degree conferred a statistically significant but slight GPA advantage, at the four-semester mark possession of an Associates is not significantly associated with GPA. Also, the effect for an AGEC plus an Associates degree is comparable to the effect for an AGEC alone—about a tenth of a point.

Follow-up analysis
While students who enrolled in community college prior to 1997 were excluded from our principal analysis, we did run a separate analysis on that group of students. This regression analysis allowed us to compare whether the impact of possessing an

Associates Degree on university outcomes changed once the AGEC was introduced. We also thought that age might be an important factor to examine in this group of "early enrollers in community college," since they were students who had taken considerably longer between entering community college and entering university. Surprisingly, just as for the post-1997 students, possession of an Associates degree was not a strong predictor of university GPA for the pre-1997 group—a little higher but still less than a tenth of a point. Similarly, the impact of age on GPA was essentially the same for both the pre and post-1997 students.

D. Credits at Graduation

As noted above in the Methods section, we felt that total credits at graduation reflects something about the efficiency with which students make it through their course of study. For this analysis, conducted upon graduates only, we looked at the effects of possession of an AGEC or Associates Degree or both—and other variables—on credits earned at time of graduation. Table 10 below presents the results.

Table 34. Credits at graduation

Variable	Effect on Credits Needed to Graduate
AGEC only	-3.53
ASSC only	-.15*
AGEC and ASSC	-.76
Total transfer hours (in units of 3)	.45
Entry Semester	-1.04
Entry Year	-2.40
Gender	-1.94
Ethnicity	-1.94
NAU	2.14
UA	12.37
Average Earned Semester Hours	.426

Note: The reference category (not appearing in the table) for the degree/certificate variables is "neither," for Gender is "male," and for the university variables is "ASU."

In interpreting Table 10, it should be noted that fewer credits is the positive, more efficient outcome. Therefore we would expect an inverse relation between positively influential variables and the total number of credits. Figures in the Effect column are interpreted as the number of credits at graduation that a variable adds or subtracts, holding other variables constant. Starred figures are statistically insignificant effects for categories of group variables.

Impact of AGEC and Associates Degrees

From Table 10 we can see that students who possess an AGEC (only) at university entry can graduate with about three and a half fewer credits than students who enter with just transfer credits. Students with an AGEC plus an Associates have an advantage of

less than one credit, and students with an Associates only do no better than students with no degree at all.

Total Transfer Hours
Total transfer hours is directly related to credits at graduation, in the sense that the more credits a student enters with, the more credits he or she accumulates by graduation. The effect isn't huge—about half a credit (.45) for each additional three-credit course a student brings to the university. Interestingly, this variable has been a predictor of success for all of the other outcomes studied—time to graduation, persistence, and GPA—but here it's a slight drag on efficiency.

Gender, Age, and Ethnicity
Age is not a predictor of graduation credits, and was dropped from the analysis. Gender and ethnicity have effects of similar magnitude—females and white students manage to graduate with about two (1.94) fewer credits than males and non-whites. As with the effect of an AGEC plus Associates—and perhaps even for AGEC only—this is a finding of statistical significance, but not necessarily of practical significance.

Entry Semester/Year Effects
Students transferring in the fall do slightly better than those transferring in the spring, but the yearly cohort effect is much stronger. On average, and independent of the spring/fall division, students from each succeeding year graduate with almost two and a half fewer credits than those from the year before, holding all other variables constant. This would come to about 12 credits across the 5 yearly cohorts in the dataset.

As with the effects for all variables analyzed, this cohort effect is independent of the effects for other variables. In other words, it suggests that the cohort advantage crosses all categories of the degree/certificate variables (AGEC only, ASSC only, etc.), for instance, including the category of students with just transfer credits. However, it makes sense to ask about the relative size of the effect for the various categories of the degree/certificate variable. In statistical terms, is there an interaction between the degree/certificate variable and the cohort variable, such that the observed strong cohort effect varies significantly within the categories of the degree/certificate variable?

With a four-category variable such as the degree/certificate variable, it is simplest to run the model separately within each of the four categories and compare results. When we do this, we see the following:

Table 35. Cohort Effect by Degree/Certificate Category

Category	Effect of Cohort on Credits Needed to Graduate
AGEC only	-2.52
ASSC only	-2.08
AGEC and ASSC	-2.03
Neither	-2.49

This indicates that the cohort effect is indeed strong across all categories of the degree/certificate variable, but that it is strongest in the AGEC (only) and the Neither categories (the latter consisting of students with only transfer credits). For students with an AGEC only, and students with just transfer credits, the cohort effect is about 2 ½ fewer credits per year needed to graduate. For students with an Associate's (AAS, AGS) only, or with the AGEC plus Associate's, the cohort effect is about two fewer credits per year needed to graduate.

University Effects
Clearly ASU (the base or comparison category) does better than NAU or UA on this outcome. NAU students take about two more credits to graduate than ASU students, while UA students take a full 12 credits more, holding other variables—and particularly entry credits—constant.

E. Community College Influence

In this analysis we categorized community college transfers as either from Maricopa, Pima, or Rural based on the origin of their degree or AGEC. Students with only transfer credits were of necessity excluded from the analysis as they might have earned credits from a number of institutions. As a result these analyses are conducted on a sub-population of the dataset, and not directly comparable to the previous findings. Analyses were conducted on persistence, time to graduation, university GPA, and credits at graduation. For simplicity of presentation, we have removed all variables other than the community college classification from the tables below. (Note: full tables may be found in the Appendices.)

1. Persistence

Table 11 shows the results of the analysis of persistence after one year at the university. As before, starred figures represent statistically insignificant effects for a group variable category.

Table 36. One-Year Persistence

Variable	Effect on Likelihood of Persisting
Maricopa	1.15*
Pima	1.54

Note: The Rural category is the reference category and thus does not appear in the table.

As with the university variables, one category for the community college classification must be the reference category—the one not appearing in the table—and here it is the Rural community colleges. The effects for Maricopa and Pima are thus interpreted with respect to the rural category. Table 11 shows that Pima transfers are 1.54 times, or 54%, more likely to persist after one year than students from the rural colleges, holding other

factors equal. Maricopa students are no more likely than rural college students to persist after one year.

2. Time to Graduation

Tables 12 through 15 below present the results for graduation within two to five years. Pima students show an advantage relative to Rural students for all four analyses, and the advantage steadily increases. In two years, they are 1.67 times as likely to have graduated, twice as likely in three years, about two and a half times as likely in four years, and 2.8 times as likely in five years.

Maricopa students are no more likely than Rural students to graduate in two years. Their likelihood of graduating in three years is about one and a half times that of Rural students, and this advantage stays relatively unchanged in the three, four, and five year analyses.

Table 37. Two-Year Graduation

Variable	Effect on Likelihood of Graduating
Maricopa	1.12*
Pima	1.67

Table 38. Three-Year Graduation

Variable	Effect on Likelihood of Graduating
Maricopa	1.59
Pima	2.08

Table 39. Four-Year Graduation

Variable	Effect on Likelihood of Graduating
Maricopa	1.49
Pima	2.43

Table 40. Five-Year Graduation

Variable	Effect on Likelihood of Graduating
Maricopa	1.49
Pima	2.83

3. GPA

There were no significant effects of community college origin on the outcomes of one- or two-year GPA. Both Pima and Maricopa students had university GPAs comparable to those of Rural students—and thus to each other as well.

4. Credits at Graduation

As Table 16 shows, both Maricopa and Pima students manage to graduate from the university with fewer credits than Rural community college students—some two and a half for Maricopa students and four for Pima students. Neither of these represents a major advantage, but is in keeping with the trends from the other analyses.

Table 41. Credits at Graduation

Variable	Effect on Credits needed to Graduate
Maricopa	-2.47
Pima	-4.05

Summary

Both Pima and Maricopa students do better than Rural community college students on most outcomes tested. Pima students had a very strong advantage for one-year persistence and graduation within all time frames, and Maricopa students had a relatively strong advantage for graduation within three, four, and five years. Neither group had an advantage over Rural students on one-year or two-year university GPA. There may be a number of reasons for these findings, including physical distance between the location of the community colleges, where many or most students may have lived, and the transfer university. Note again, however, that comparisons were made only among those with entry degrees/AGEC, and excluded all students bringing only transfer credits to the university—and the latter represent the majority of transfer students.

CONCLUSIONS AND RECOMMENDATIONS

The Arizona transfer system appears to be working well and is functioning as a tool and system exactly as intended. Through the system students are able to complete their degrees with nearly one semester FTE less coursework than was the case five years ago. Degree completion is favorable under AGEC. The benefits of the Transfer Pathways program are less certain.

In general, stakeholders are satisfied, and most feel that the system is working toward the goals of easing the transfer process for students and improving student progress toward earning baccalaureate degrees. Because the system, in our judgment, is working effectively, large scale changes are not necessary, but improvements, especially in communications, should be made to continuously to improve the system. Such improvements would increase the number of students who know about, and subsequently use, the components of the transfer system, and would also increase consistency for all users and stakeholders.

It is Hezel Associates' assessment that, overall, the transfer and articulation system itself is working as designed and does not need major changes. Improved methods of communication and collaboration among all stakeholders, however, are essential and should be addressed immediately. Community college advisors and ATF members expressed in surveys and focus groups that the system needs considerable improvement. By and large, their peers at universities did not see the need for such substantial changes. Nevertheless, universities do not always realize the impact their changes have on the community colleges, and vice versa. Many of the problems students have are dealt with by community college personnel, while at the universities it is the successful students who are more visible. Issues may not be as obvious, therefore, to individuals at the universities. In our estimation, most of these problems can be resolved by improving and increasing the amount of communication and collaboration among all colleges and universities and their staff and students.

Hezel Associates offers the following recommendations to continue to improve the Arizona transfer system:

1. **ABOR and the community colleges should sponsor a campaign to increase student awareness of the components of the Arizona transfer system.** Regardless of whether they actually plan to complete an AGEC or transfer pathway degree, or whether or not they plan to take common courses, all students who plan to transfer from an Arizona community college to a university should be aware of all of the options available to aid in their transfer experience. Awareness of all their options will ensure that students make more fully informed decisions. More information should be made available to students, particularly regarding available, but underused, resources. As a way to increase awareness, community colleges should require mandatory orientation and/or

advising opportunities before or during the students' first semester enrolled at the college.

2. **Advisors should be given additional and on-going training to ensure that they are fully aware of all components of the system so they can help students make the best decisions for their individual situations.** Training should be standardized at both the university and community college levels, and should include not only opportunities for updated information, but also specific strategies for assisting various transfer student populations. Efforts should also be made to ensure that students know who the transfer student ombudsperson(s) are at their institution, so that they know who to go to should they be unable to find answers elsewhere. Academic advising is perhaps the most critical part of the entire transfer system and process for students. Although members of the student focus groups reported successfully moving through the process without the help of an advisor, and survey data shows instances of independent student success, good advising seems to be a critical contributor to student success.

3. **University and community college personnel should improve and increase the volume of communications regarding articulation and transfer.** The Board of Regents should establish such communication as a priority to the presidents, and they, in turn, should communicate the urgency of cross-institutional communication to their administration, faculty and staff. Concurrently, community college presidents should do the same. More specifically:
    - The Articulation Task Forces should be reviewed to determine their effectiveness, consistency and composition. The review would result in ensuring that the right people are in attendance, assessing the quality of the decision-making process and ensuring that policy issues are being addressed in a timely manner.
    - Universities and community colleges should establish policies and practices to discuss curricular changes that impact each other. Regular discussions should be related to curricula and policy and any other topics that impact transfer issues.

4. **The transfer system and its individual components should be streamlined to improve clarity, understanding, functionality and efficiency.** Respondents expressed confusion regarding the transfer pathway degrees and common course matrices, and it is clear that too many options exist, even for the most savvy students. The AGECs also provide too many options and exceptions, and program-specific transfer articulation partnerships have further complicated the system. Too much specialization of program requirements and too many options have led to an unwieldy system, according to many stakeholders.

5. **The Arizona transfer website should be redesigned as a portal for advisors, faculty, staff and especially students.** Through the portal, individuals should

have access, either directly or via links, to relevant information regarding the transfer process. Once the website redesign has been completed, a marketing campaign should be conducted to publicize the site to students. Two-thirds of student survey respondents had never visited the site, a figure that is far too high considering the vast amount of information available to them through the site. In particular, the website redesign should:

- Make the website more user-friendly and easily navigable (see notes on consistent, modern design as well as dynamic navigation system in Section G.2. above).
- Add more images and enhance the color scheme to make it more attractive and appealing to students.
- Information should also be reviewed systematically and at regular intervals to ensure that the site is consistently up to date.
- Old information should be either completely removed from the site or archived so as not to confuse visitors.

6. **All information and resources, electronic and print, should be updated in a timely manner to reflect policy or procedural changes.** Advisors, in particular, should be informed electronically about the changes, via email and via the advisors' portal.

7. **The community colleges and universities should standardize their administrative processes related to the transfer system, such as the way in which AGEC and AGEC in progress are designated on student transcripts.** Standardization will result in less confusion among staff and fewer delays and problems for students.

8. **The universities should increase their commitment to transfer students by creating student-oriented transfer offices or centers where students can find advisors, orientation programs and one-stop/quick-stop answers**. Alternatively, the universities could designate a transfer-oriented staff person in each appropriate office on campus, such as admissions, academic advising, student affairs, registrars, etc.

9. **The community college application process should include an early alert system focusing on "older" students who have stopped out, or have been out of school for more than ten years.** This system will redress ongoing problems associated with archived student records specific to this group of students, and it will provide immediate attention to those students as they progress.