



Navigating Vertical Transfer Online: Access to and Navigability of Information on Community College Websites

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In 2011, nearly 40% of college students began their education at a public, 2-year college (NCES, 2016). Given that community colleges enroll a disproportionate number of Black, Hispanic, low-income, and first-generation college students, the success of community college entrants has important implications for equity in educational attainment and social stratification (Schudde & Goldrick-Rab, 2015). Nationally, 80% of first-time community college entrants aspire to earn a bachelor's degree, but only a quarter transfer to a bachelor's-degree-granting institution within 6 years (Horn & Skomsvold, 2011; Shapiro, Dunder, Wakhungu, Yuan, & Harrell, 2015). The “transfer function” of community colleges—the vertical transfer pathway that allows students to transition to a 4-year institution—is not optimized, and many students fail to achieve their educational goals (Bailey, Jenkins, Fink, Cullinane, & Schudde, 2016; Taylor & Jain, 2017). While there are a variety of explanations for the faulty transfer function, scholars, policymakers, and practitioners seem to agree that a lack of transparent transfer pathways contributes to confusion among students and the people students turn to for help (Hossler et al., 2012).

Recent research highlights the increasingly important role that online information plays in helping students navigate college (GAO, 2017; Jaggars & Fletcher, 2014; Margolin, Miller, & Rosenbaum, 2013). This paper examines the online transfer information that colleges offer to students as they navigate the “shapeless river” of bureaucratic hurdles and coursework that must be traversed in order to achieve important milestones at a community college (Scott-Clayton, 2011, p. 1). Through interviews with transfer personnel at community colleges in Texas, we examined staff and administrators' perspectives about navigating transfer requirements and the online information available to guide students and staff. We collected online transfer information provided on community college websites and analyzed it to assess the ease of access and

navigability of the content. We conclude with a discussion of the implications, as well as recommendations for improving transparency of the transfer process.

The Transfer Function, Structural Problems, and Information Constraints

While many students enter community college with high educational aspirations, most fail to reach their goals, spurring debate over the effects of enrolling in the public, 2-year sector. Canonical theories from sociology argue that community colleges “cool out” or manage student ambitions, diverting students who otherwise may have entered a university, decreasing their educational and economic attainment and reproducing inequality (Brint & Karabel, 1989; Clark, 1960). In contrast to theorists who anticipate diversion, “structuralists” argue that community colleges enroll too many students and employ too few advisors to enable a systematic institutional letdown of student aspirations (Rosenbaum et al., 2007; Scott-Clayton, 2011). Institutional constraints—particularly limited financial resources—contribute to a structure that overlooks the responsibilities and realities of the student population (Rosenbaum et al., 2007). Many community colleges fail to offer adequate support for students with diverse needs to navigate bureaucratic hurdles and conflicting demands (Deil-Amen & Rosenbaum, 2003).

The transfer process is wrought with bureaucratic hurdles and complex information. Students must navigate the requirements of their primary institutions (the college where they are currently enrolled) and the requirements of their prospective destination institution. Confusion regarding course and degree selection and credit transfer are one of many hurdles students face in navigating the transfer process (Person, Rosenbaum, & Deil-Amen, 2006). Rosenbaum et al. (2007) found that opaque transfer policies and insufficient information related to credit portability, along with ineffective advising (or a lack of advising) contribute to students’ confusion. Key barriers to transfer include inadequate support services to promote and maintain

progress on streamlined pathways and the lack of transparent information, including structured “maps” to guide movement from one institution to another (Bailey et al., 2015; Bailey, Jenkins, Fink, Cullinane, & Schudde, 2016).

To adequately support transfer, institutions must illuminate transfer requirements during each phase of students’ educational trajectory—as they make course enrollment decisions, consider potential destination colleges, and attempt to transfer credits—and keep students informed as they make decisions. Structuralism highlights the scaffolding that colleges can build to support students, including information, advising, and clear milestones that allow students to move efficiently towards their goals (Bailey, Jaggars, & Jenkins, 2015; Rosenbaum, Deil-Amen, & Person, 2007; Scott-Clayton, 2012). Yet, for community college students interested in earning a bachelor’s degree, it seems there is a “hidden curriculum” of transfer, which includes taken-for-granted knowledge about how to proceed through the transfer process (Deil-Amen & DeLuca, 2010; Rosenbaum et al., 2007).

Many community college students appear to have incomplete information, referred to as *information constraints*, as they navigate transfer (Bailey et al., 2015; Fink & Jenkins, 2017; Hodara, Martinez-Wenzel, Stevens, & Mazzeo, 2017; Rosenbaum et al., 2007). In this context, information constraints are defined as a lack of information about what students need to do to prepare for, and successfully transfer to, another college to earn their desired degree. The pathway to a baccalaureate through community college involves an overwhelming number of choices, many of which may result in misinformation, loss of time and money, and, ultimately, movement away from the credential they intended to earn (Scott-Clayton, 2011). To overcome information constraints, the information regarding transfer should be easy to locate and interpret, well organized, and complete.

But to what extent do current practices regarding transfer align with these ideals and purported best practices? Currently, we have little insight into what the information made available to students looks like or how institutional agents make sense of the transfer process and informational barriers students face, though a recent report from the Government Accountability Office (GAO) (2017) suggests that colleges provide inadequate information online and often lack the support services to make up for that inadequacy. In this paper, we leverage the structuralist perspective, along with the construct of “information constraints,” as a theoretical framework with which to evaluate the availability and navigability of online transfer information provided by community colleges to their students. In the remainder of the literature review, we describe student pathways through community college and the way the current transfer function differentially benefits some students over others, followed by an overview of existing approaches to overcome information constraints and student confusion regarding transfer pathways.

The Transfer Function and Backdoor Pathways: Who Benefits from the Status Quo?

Credit transfer is important for a number of college students. One third of all first-time college students transfer to a different institution within 6 years of entry (Shapiro et al., 2015). Among community college entrants, nearly a quarter transfer to a 4-year institution—most without first receiving a degree prior to transfer (Shapiro et al., 2015). Still, credit transfer is relevant to many college attendees, not just those seeking vertical transfer. Below, we describe patterns of enrollment that require credit transfer, illustrating the broad reach of transfer policies, and then we discuss the implications of information constraints related to those policies for educational equity.

Swirling students and non-linear pathways. While the focus of our inquiry is vertical transfer—transitioning from a public, 2-year to 4-year institution—college students engage in

complex movement between institutional sectors. They “swirl” through college, moving laterally and vertically between institutions (transferring to colleges at the same level or that offer higher degrees, respectively), switching between the public and private sector, and even “reverse” transferring from 4-year to 2-year institutions (Adelman, 2006; Deil-Amen & Rosenbaum, 2003; Goldrick-Rab, 2006; Shapiro et al., 2015). Even students who do not technically transfer between institutions earn college credits from a variety of institutions. University students take courses at community colleges to transfer to their home institution; “dual enrollment” high school students accrue college credits before entering college; co-enrollment college students take credits concurrently at multiple postsecondary institutions (Shapiro et al., 2015, p. 6). As a result of these enrollment patterns, transfer policies and processes are relevant for a large proportion of college-goers today.

As the number of students consuming postsecondary education through “nontraditional” enrollment patterns continues to rise, fewer students experience college as continuous enrollment at a traditional, residential, 4-year institution (Adelman, 2006). Students’ backgrounds and educational preparation appear to influence transfer success (Dowd & Melguizo, 2008; Hoachlander, Sikora, & Horn, 2003; Speroni, 2011; Wood, Nevarez, & Hilton, 2012). But recent research emphasizes the role of transfer policies and practices as potential alternative predictors of transfer outcomes (Fink & Jenkins, 2017; GAO, 2017; Hodara et al., 2017). Furthermore, inaccessible or perplexing transfer information may disproportionately impact some students.

Who is best and least served by the status quo transfer function? Transfer is a matter of educational opportunity; a non-optimal transfer function has implications for unequal educational attainment (Chase, Dowd, Pazich, & Bensimon, 2014). Thus, it is useful to consider which students are likely impacted by unclear transfer information. The “hidden curriculum” of

transfer is often made visible to students with the necessary resources to navigate the community college and its institutional partnerships (Deil-Amen & DeLuca, 2010; Rosenbaum et al., 2007).

Student background, and particularly characteristics related to external responsibilities, appear to predict transfer. Older students, students from low-socioeconomic households, and those who have dependents are disadvantaged in the transfer process (Dougherty & Kienzl, 2006). Despite demonstrating higher educational aspirations than their peers, African American and Hispanic community college students are less likely than their White peers to earn a bachelor's degree (Hoachlander et al., 2003; Monaghan & Attewell, 2015).

Many transfer-intending community college students do not know where to begin as they navigate the transfer pipeline, but this is particularly true for students who lack the social networks necessary for successful navigation of the transfer process (Person, Rosenbaum, & Deil-Amen, 2006). Friends, classmates, and family members who navigated college, along with staff and faculty, can provide inside information and additional support to help students navigate complex information and bureaucratic hurdles. Academic integration—measured by experiences such as participating in study groups and talking with faculty outside of class—appears to significantly predict transfer for White students, but not for underrepresented students of color, which may be related to unmeasured qualitative differences in campus experiences (Crisp & Nuñez, 2014). Recent research illustrates that students with social and academic connections to help them curate information related to transfer are advantaged in navigating byzantine transfer policies—those networks provide access to the hidden curriculum (Schudde, Jabbar, & Hartman, 2017).

As college admissions become more competitive and college costs rise, middle-class families seek ways to ensure higher education access and affordability for their children

(Schudde & Grodsky, forthcoming). Inequitable transfer patterns illustrate the need for improvement and highlight transfer pathways as a means to offset broader trends in postsecondary inequality. The dissemination of transfer information through formal mechanisms—rather than relying on optional student interactions—is one potential means to improve transfer outcomes for students at greatest risk of information constraints.

Potential Resolutions: Can the Transfer Function be Optimized?

The community college pathway toward a baccalaureate includes several hurdles. Stakeholders in higher education acknowledge the challenges posed by bureaucratic hurdles, complex and opaque information, and inadequate support services to navigate transfer. In this section, we describe the potential solutions, including approaches used at the state and institutional level, to make transfer processes and requirements more transparent.

State Policy Solutions

One common policy response at the state level is the development of a set of lower-division courses that are universally accepted at public colleges statewide, referred to as a *general education core*. Thirty states have adopted this strategy (Jenkins, Kadlec, & Votruba, 2014). Because college advisors often recommend that transfer-intending students choose coursework to satisfy lower-division general education requirements, the core should standardize recommended courses for transfer, at least partially laying bare the hidden curriculum. In practice, the core, on its own, does not create a seamless transition between institutions because bachelor's degree requirements vary by major. Thus, lower-division coursework may not count toward a degree in the student's major (Bailey et al., 2016).

Another popular strategy for improving transfer success is the adoption of *transfer agreements* (also called *articulation agreements*). Articulation agreements serve to negotiate the

requirements for students to move between institutions (Anderson, Sun, & Alfonso, 2006). Several states have adopted statewide articulation agreements, but many still rely on “bilateral agreements” between two institutions, leaving students and advisors to navigate specific agreements between colleges and programs (Root, 2013). Even with statewide agreements, bilateral agreements are often necessary to enable negotiation between departments, due to variation in postsecondary curricula (Fink & Jenkins, 2017). Despite promising trends in some states with statewide agreements like Florida and California (Bustillos, 2017; Garcia Falconetti, 2009), there is little evidence that statewide articulation agreements improve transfer rates or degree attainment (Anderson, Sun, & Alfonso, 2006; Roksa & Keith, 2008).

Several scholars suggest that rather than statewide articulation agreements, institutional partnerships across the public 2-year and 4-year sectors of higher education are key to making the transfer process more transparent (Deil-Amen & Rosenbaum, 2003; Fink & Jenkins, 2017; Rosenbaum et al., 2007). When institutions are ill-aligned, students may lose credits in transfer, even in the presence of overarching state policies (Bailey et al., 2016). Yet, 4-year institutions are poorly incentivized to create a transfer-receptive culture (Herrera & Jain, 2013; Jenkins et al., 2014).

Institutional Interventions to Overcome Information Constraints

Interventions that improve the information available to students may illuminate the hidden curriculum of transfer, rather than rewrite it (arguably an aim of some transfer agreements). Transfer pathways available to students are deeply entangled with the manner in which institutions distill and disseminate information regarding credit portability (Hagedorn, 2010; Townsend & Wilson, 2006). Yet, recent research suggests a wide variety in the availability

and quality of both transfer advising and publicly available information regarding transfer (GAO, 2017).

Advising. Many students voice the need for greater support as they attempt to navigate the transfer process (Allen, Smith, & Muehleck, 2014; Davies & Dickmann, 1998; Herrera & Jain, 2013; Jain, Bernal, Lucero, Herrera, & Solorzano, 2016; Jain, Herrera, Bernal, & Solorzano, 2011; Senie, 2016). Some institutions offer specialized services to guide transfer-intending students, including transfer-specific advisors, centers, and events, but there is a wide variation in the quality and availability of those resources (Bailey et al., 2016; Hodara et al., 2017). Many community colleges, however, may be unable to meet the demand for effective transfer advising (Allen, Smith, & Muehleck, 2014; Bahr, 2008; Davies & Dickmann, 1998).

Plagued by high student-to-advisor ratios and resource constraints, many institutions are unable to provide one-on-one advising (Bahr, 2008; Schudde & Goldrick-Rab, 2015). Based on interviews with stakeholders in higher education, the GAO (2017) argued that students need more information regarding transfer and often struggle to obtain adequate advising and information to plan their path (p. 12). Unfortunately, community college students and advisors cannot rely on 4-year institutions to fill the void in transfer-specific advising, as a result of reluctance of 4-year colleges to collaborate (Herrera & Jain, 2013), and/or similar constraints at some 4-year colleges, where admissions staff are unable to meet with every student individually (GAO, 2017, p. 13). Given barriers to the face-to-face transmission of transfer information, it is likely that a different tactic is needed to unveil the hidden curriculum and ensure the availability of quality transfer information for all students. Online information may be a reliable alternative, but evidence suggests that many community colleges are not providing adequate resources for students through this medium.

Online content. College websites are an important tool to convey institutional and program-specific information to students, but the quality and ease of access of information seems to vary across institutions (Jaggars & Fletcher, 2014; Khlaisang, 2017; Margolin et al., 2013). Postsecondary institutions increasingly use websites to share consumer information, and the federal Department of Education requires that credit transfer policies and other disclosures, such as net price calculators, be posted on school websites (GAO, 2017). However, colleges do *not* have to disclose which institutions they have articulation agreements with, or present other transfer information (GAO, 2017, p. 32). Yet posting the information online would make it more accessible to prospective and current students, compared with restricting access exclusively to physical publications available on campus (GAO, 2017).

In an effort to understand the transparency of the college transfer process, the GAO (2017) interviewed 25 stakeholders from colleges (n = 8) and higher education organizations (n = 17) and reviewed the websites of a nationally representative sample of colleges (n = 214). They argued that students would better understand their transfer options if the information was accessible online. However, their website review found that existing college websites vary dramatically in the ease of access and clarity of online transfer information.

The ease of access of online information is important. When students struggle to locate and identify the correct information, they struggle to answer questions as they proceed toward their educational goals (Nodine, Jaeger, Venezia, & Bracco, 2012; Van Noy, Trimble, Jenkins, Barnett, & Wachen, 2016). Similarly, when informational resources are inconsistent and poorly organized (i.e., they are not “navigable”), students struggle to make important decisions about their education (Jaggars & Fletcher, 2014). Online resources for students must be intentionally

developed, since students' ability to gather and evaluate appropriate online information often fails to meet expectations for effective information use (Grimes & Boening, 2001).

The recent GAO report illustrates the breadth of the problem: a systemic lack of available and navigable information to guide students in their transfer efforts. While the GAO (2017) highlighted the perspectives of knowledgeable stakeholders and the inadequacies of many college websites, their evaluation did not focus on community colleges. As such, it does not consider the organizational context within which community colleges sit. Community colleges operate within larger state contexts. Their relationships with other institutions, namely public universities and overarching governing bodies, shape the environment and the responses available to community colleges.

In this paper, we aim to provide greater depth by illustrating what the variation actually looks like within a statewide community college context and offering insights on the perspectives of transfer personnel and administrators at the colleges we examined. Moving beyond the GAO's findings and recommendations, we closely examine transfer information and the response of institutional agents about that information in the complex community college system in Texas. In this study, we coded the online transfer information provided by 20 Texas community colleges. We assessed the ease of access and navigability of the information provided and spoke to key transfer personnel about how they provide transfer information to their students, including questions regarding their interpretation of the ease with which students can find transfer information through their college's website.

Texas Context

In Texas, 81% of first-time community college students enroll in transfer programs, but less than a quarter of transfer aspirants end up transferring, closely mirroring national trends

(THECB, 2014). Transfer of credits between institutions is a common policy concern, as three quarters of bachelor’s degree recipients took at least some credits at a Texas community college (THECB, 2014). Texas includes a number of initiatives to improve success among transfer students. The core curriculum (Texas’s general education core) and Field of Study (FOS) curricula (additional lower-division coursework that must transfer between colleges, available for only nine major fields) are mandated. Other initiatives, like transfer agreements, are “encouraged, but not required” (THECB, 2014). The FOS and the core curriculum should ease transfer for students who switch between any of Texas’s public postsecondary institutions by eliminating course duplication. Transfer agreements are bilateral, occurring between individual institutions. They vary in availability and quality depending on which college and program students transfer to and from. Most colleges have a number of practices to facilitate transfer, but most personnel acknowledge that practices and policies are developed posthaste—often when additional funding comes in or they receive complaints about inadequate compliance with state policies like the core and FOS. Furthermore, like other states, Texas continues to lack incentives for institutions across the 2-year and 4-year sectors to work together to ease transfer via clear, guided pathways and efficient implementation of existing transfer policies (Bailey et al., 2016).

Research Questions:

Our study examines online transfer information at Texas community colleges. We ask the following interrelated research questions:

1. How accessible and navigable is transfer information on community college websites?
2. How do administrators and transfer personnel think about online transfer information and its ease of access and navigability?

Methods

To address our research questions, we interviewed transfer personnel and reviewed the institutional websites of Texas community colleges. We used a qualitative case study approach, triangulating our findings from multiple sources of data (Maxwell, 2012). To select colleges for our sample, we used student-level data obtained from National Student Clearinghouse (NSC), aggregated to the college level to estimate transfer outcomes for each community college in the state. For the community colleges in our sample, we coded institutional websites based on how accessible and navigable the transfer information was from all 20 community college websites. We also conducted interviews with college administrators, advisors, and other transfer-related personnel. We describe each of these processes next.

Site Selection

We selected 20 community colleges using institution-level transfer-out and bachelor's completion rates calculated from National Student Clearinghouse data.¹ The "transfer-out rate" is the percentage of fall 2007 entrants who transferred to a baccalaureate-granting institution within 6 years of initial enrollment. The bachelor's completion rate is the percentage of fall 2007 entrants who earned a bachelor's degree from any 4-year institution within 6 years of enrollment. To ensure adequate variation based on institutional performance on transfer outcomes, we included institutions with relatively high and low performance on the transfer measures described above.

Using purposeful selection (Maxwell, 2012), we identified four types of community colleges for the sample (five per category, 20 total): 1) Colleges with the lowest transfer-out rates, 2) Colleges with high transfer-out rates (above the median) and middling bachelor's completion rates, 3) Colleges with high bachelor's completion rates, among those with high

¹ Access to the data was provided through an agreement between the Community College Research Center and the National Student Clearinghouse.

transfer-out rates, 4) Colleges with low bachelor's completion rates, among those with high transfer-out rates. Table 1 provides descriptive information for each college in the sample, including their categorization based on transfer outcomes using NSC data.

Table 1
Description of Colleges in the Sample

| College Characteristics | College | | | | | | | | | |
|--|--------------|----------------|--------------|--------------|---------------|--------------|------------|------------|--------------|------------|
| | A | B | C | D | E | F | G | H | I | J |
| Campus | | | | | | | | | | |
| Setting | Town-Distant | Suburb-Midsize | Large City | Small City | Large City | Rural-Fringe | Large City | Large City | Town-Distant | Large City |
| 4-year colleges within 50 miles | 2 | 8 | 7 | 2 | 4 | 0 | 1 | 9 | 1 | 3 |
| Student Characteristics | | | | | | | | | | |
| Undergraduates | 5,040 | 4,000 | 9,550 | 6,160 | 11,600 | 3,240 | 28,660 | 47,200 | 9,130 | 16,660 |
| Part-time | 0.70 | 0.78 | 0.80 | 0.71 | 0.86 | 0.55 | 0.70 | 0.70 | 0.62 | 0.75 |
| Female | 0.60 | 0.58 | 0.67 | 0.60 | 0.57 | 0.61 | 0.56 | 0.58 | 0.58 | 0.54 |
| Age 25+ | 0.15 | 0.29 | 0.43 | 0.27 | 0.36 | 0.28 | 0.25 | 0.48 | 0.22 | 0.22 |
| In-state | 1.00 | 0.99 | 1.00 | 0.96 | 0.97 | 0.98 | 0.95 | 0.87 | 0.97 | 0.98 |
| Distance Learners | 0.50 | 0.33 | 0.31 | 0.49 | 0.45 | 0.35 | 0.21 | 0.34 | 0.40 | 0.23 |
| Students of Color | 0.77 | 0.49 | 0.83 | 0.72 | 0.73 | 0.39 | 0.92 | 0.86 | 0.44 | 0.75 |
| Pell Recipients | 0.37 | 0.24 | 0.39 | 0.23 | 0.27 | 0.26 | 0.49 | 0.39 | 0.41 | 0.27 |
| Credentials and Course Completion | | | | | | | | | | |
| Associate Degree | 350 | 470 | 900 | 690 | 1,030 | 340 | 3,670 | 6,570 | 840 | -- |
| Core Completer | 190 | 290 | 360 | 50 | 490 | 160 | 3,190 | 4,950 | 660 | -- |
| Transfer Outcomes | | | | | | | | | | |
| Low transfer-out | X | X | X | X | X | | | | | |
| High transfer-out, high BA rate | | | | | | X | X | X | X | X |
| High transfer-out, modest BA rate | | | | | | | | | | |
| High transfer-out, low BA rate | | | | | | | | | | |

| College Characteristics | K | L | M | N | O | P | Q | R | S | T |
|--|------------|--------------|------------|------------|------------|--------------|----------------|--------------|--------------|--------------|
| Campus | | | | | | | | | | |
| Setting | Large City | Town Distant | Small City | Large City | Large City | Town-Distant | Suburb-Midsize | Rural-Fringe | Town-Distant | Midsize City |
| 4-year colleges within 50 miles | 2 | 1 | 8 | 7 | 7 | 3 | 7 | 2 | 2 | 7 |
| Student Characteristics | | | | | | | | | | |
| Undergraduates | 39,210 | 4,470 | 68,100 | 15,900 | 47,670 | 18,910 | 29,150 | 4,470 | 9,430 | 8,340 |
| Part-time | 0.78 | 0.78 | 0.74 | 0.70 | 0.70 | 0.48 | 0.67 | 0.62 | 0.68 | 0.73 |
| Female | 0.55 | 0.60 | 0.59 | 0.53 | 0.58 | 0.51 | 0.55 | 0.62 | 0.56 | 0.52 |
| Age 25+ | 0.37 | 0.17 | 0.29 | 0.33 | 0.34 | 0.9 | 0.27 | 0.59 | 0.25 | 0.36 |
| In-state | 0.93 | 0.97 | 1.00 | 0.99 | 0.96 | 0.96 | 0.99 | 0.34 | 0.99 | 0.99 |
| Distance Learners | 0.24 | 0.38 | 0.31 | 0.32 | 0.20 | 0.20 | 0.26 | 0.97 | 0.36 | 0.33 |
| Students of Color | 0.66 | 0.54 | 0.68 | 0.77 | 0.66 | 0.38 | 0.49 | 0.40 | 0.39 | 0.80 |
| Pell Recipients | 0.23 | 0.27 | 0.33 | 0.29 | 0.37 | 0.24 | 0.21 | 0.42 | 0.19 | 0.28 |
| Credentials and Course Completion | | | | | | | | | | |
| Associate Degree | 3,070 | 340 | 6,310 | 2,010 | 5,740 | 1,060 | 2,550 | 620 | 810 | 1,140 |
| Core Completer | 2,350 | 260 | 1,140 | 1,570 | 1,030 | 310 | 2,640 | 90 | 680 | 650 |
| Transfer Outcomes | | | | | | | | | | |
| Low transfer-out | | | | | | | | | | |
| High transfer-out, high BA rate | | | | | | | | | | |
| High transfer-out, modest BA rate | X | X | X | X | X | | | | | |
| High transfer-out, low BA rate | | | | | | X | X | X | X | X |

Notes: See Appendix, Table A1, for sources.

Interviews

For the institutions sampled, we contacted personnel who serve community college transfer students. We identified relevant staff members through online directories and referrals (e.g., when a staff member at one institution recommended someone from another sampled institution or if our initial contact suggested a more suitable participant). Within our institutional sample, we interviewed representatives from 18 institutions. In most cases, we interviewed one staff member per college (13 colleges). When possible, we interviewed more than one staff member (5 colleges). Our final interview sample included 26 community college personnel. Seventy-three percent of the sample were women. Participants held a variety of positions related to transfer, including academic advisors (5), transfer specialists (2), transfer center directors (6), academic advising directors or team leads (6), and administrators who oversee student services and/or facilitate articulation agreements (7).

In spring 2016, we performed semi-structured telephone interviews, lasting approximately one hour in length. The interview protocol concerned barriers that prevent students from successfully transferring and college practices related to vertical transfer. For the purpose of this study, we focused a subset of the questions on information provided to students in order to navigate transfer, including online information provided by the college and perceived ease with which students could navigate that information. We took detailed notes during our interviews, in addition to recording and transcribing the interviews. We coded each transcript using broad organizing themes based on state policies and the literature on community college transfer, and developed subthemes within each of these as they emerged. The research team had frequent discussion throughout coding to ensure consistency in coding. For the purpose of this paper, we developed analytic memos and held meetings to ensure our coding and analysis of the findings aligned.

Website Review

In summer 2016, we reviewed the websites of each of the community colleges. To assess the college's online transfer information, two coders (the second and third author) collected detailed evidence regarding the

ease of access and navigability of transfer information. Similar to Van Noy et al. (2016) we were interested in how easy the information was to locate and its clarity. We assessed the online information using two related constructs—ease of access and navigability. Both constructs were captured by Van Noy et al.’s “access to information” dimension of their website review. For our purposes, we assessed the two constructs separately as we found that colleges sometimes had easy-to-locate information that was ineffective, either due to being unclear, disorganized, or out-of-date (thus, the online information would rate high on ease of access, but low in terms of navigability). Throughout the data collection and coding process, the research team performed interrater reliability checks to ensure consistency across coders.

We defined “ease of access” of online transfer information based on how easy it was to find, how intuitive the location was, and the process students must go through to find it. The process started at the institution’s home page, where we attempted to locate transfer information by going through the drop-down menus and/or clicking related links on the page. When that failed, we used the college website’s search tools or, as a last resort, a search engine like google to locate the information. We assigned each college website a value of 1 to 5 in terms of ease of access of transfer information. The highest score of a 5 on the rubric indicates that students can locate the online transfer information easily within their first visit to the college website because it is intuitively located and labeled, requiring minimal effort to get to the transfer page. A score of 1 indicates that most information is unavailable or cannot be found within a few minutes of searching and browsing. The definitions of each score on the rubric is available in Table 2.

We defined “navigability” of transfer information based on the clarity, organization, and accuracy of information to guide students through the transfer process and necessary requirements. The highest score of a 5 on the rubric indicates that the website includes complete information regarding transfer and that it is presented in a way that is easy to understand. A score of 1 indicates that the necessary information about transfer is missing. The rubric for assessing navigability of online transfer information is also available in Table 2.

Table 2

Measuring Ease of access and Navigability of Online Transfer Information on Community College Websites

| Score | Ease of access | Navigability |
|--------------|---|---|
| 1 | None: seemingly no information to find | No information regarding transfer |
| 2 | Low: where the information is not intuitively located and required using search tool and various search terms to locate | Low navigability: Information present, but full of broken links that make it impossible to find adequate and accurate information |
| 3 | Somewhat accessible: the information was far removed from the home page, but could be found by gradually clicking through several pages, with some backtracking | Somewhat navigable: Transfer information appears to be accurate, but it requires going through disorganized system, backtracking, and facing some broken links to eventually find accurate information |
| 4 | Moderate: intuitively located, but vague labels on website menus, so finding transfer information required some backtracking to find | Moderately navigable: Policies or processes necessary to guide student through transfer present, but could be more detailed; flow of information moves from simple to complex, but requires some backtracking to help students determine transfer process and requirements |
| 5 | High: necessary information easily located on the first visit with minimal “clicks” from college homepage, intuitively located and labeled | Very navigable: Simple language used to define transfer process; succinct initial presentation followed by cohesive flow of additional details as user clicks through links to get more information; transfer options (institutional partnerships, articulation agreements) clearly presented |

Findings

Summary from Website Information

Table 3 provides a summary of our findings from the website review. Overall, we identified a wide degree of variation in terms of ease of access and navigability of online transfer information. Half of colleges in the sample (n = 10) provided online transfer information that was very easy to locate and almost half (n = 9) included information that was very navigable—easy to understand and fairly intuitive in terms of organization. One of the 20 colleges failed to post any transfer information. The college (College A) also had a low transfer rate and was not responsive to interview requests. Low navigability was more common than low ease of access—i.e., most colleges include at least some locatable information about transfer online, but on several college websites, the information was disorganized, riddled with broken links, or clearly out of date (n = 5 for low navigability).

Fewer than half of the college websites offered a specific staff member to contact regarding transfer, despite, as we explain below, a number of staff members arguing that face-to-face advising is better than online information to help students navigate transfer. Occasionally, staff emphasized face-to-face advising to justify inadequate online information (in which case, we would expect to see clear contact information available to help students identify personnel to answer their questions). There was also a wide degree of variation in terms of publicly available partnerships—some colleges boasted over 40 partnerships with public universities, while others failed to post any. According to staff, the colleges that omitted partnerships from their transfer websites had articulation agreements; however, these agreements were not posted online.

Many community colleges offer direct links to university websites as a means of providing transfer information. In some cases, the links led students to transfer admissions pages, articulation agreements, and degree plans—all relevant to transfer, though some are more relevant to students than others (as several transfer personnel pointed out, articulation agreements are often not useful to students, but the transfer plans that result from them can be). Sometimes, however, the link to a “partner university” led to the university’s home page, which requires the student to navigate yet another website to find relevant transfer information.

Table 3
Assessment of Website Information by College

| College | Transfer Center | Contact information provided on website | Number of partners | Ease of access | Navigability |
|---------|-----------------|---|--------------------|----------------|----------------|
| A | N | N/A | N/A | None | No information |
| B | N | Individual - not transfer-specific | 10 | Moderate | Moderate |
| C | Y | Individual - transfer-specific | 8 | Moderate | High |
| D | Y | Office - transfer-specific | 10 | High | Somewhat |
| E | Y | Individual - transfer-specific | 14 | High | High |
| F | Y | Individual - transfer-specific | 33 | Low | Low |
| G | N | Office - not transfer-specific | 9 | Somewhat | Low |
| H | N | Office - not transfer-specific | 21 | High | High |
| I | N | None | 2 | Moderate | Low |

| | | | | | |
|----------|---|------------------------------------|----|----------|----------|
| J | Y | Office - transfer-specific | 15 | High | High |
| K | Y | Office - transfer-specific | 42 | High | High |
| L | N | Office - not transfer-specific | 7 | High | High |
| M | Y | Individual - transfer-specific | 22 | High | Low |
| N | Y | Individual - transfer-specific | 6 | Low | Somewhat |
| O | Y | Individual - transfer-specific | 18 | Moderate | High |
| P | N | Individual - not transfer-specific | 32 | Moderate | Moderate |
| Q | Y | Individual - transfer-specific | 19 | High | High |
| R | N | None | 11 | Low | Low |
| S | N | Office - not transfer-specific | 8 | High | Moderate |
| T | N | Office - not transfer-specific | 26 | High | High |

Insights from Interviews with Community College Personnel

We spoke with community college officials about their online transfer information, along with other resources available to transfer-intending students. The conversations illuminated some of the logic behind several trends we noticed in our website review.

Reliance on university webpages. Most personnel rely heavily on university websites for university-specific transfer information, arguing that this information is more reliable than alternatives. This popular trend reflects a common sentiment among community college personnel that universities are best positioned to offer accurate online transfer information for transfer-intending students. As one community college staff member explained, “If we can get transfer materials straight from the proverbial horse's mouth, it's always going to be preferable.”

Despite the reliance on university websites, community college personnel offered mixed impressions surrounding the ease of access and navigability of that information. One transfer advisor noted that, despite her experience navigating the websites, she frequently had to “dig through several sites to get to the information.” Several community college staff members who use this information daily acknowledge the difficulty they face

locating transfer requirements. This is troubling, since many community colleges present transfer requirements to students by linking to university home pages, rather than to transfer-specific pages. Locating transfer requirements will likely be more difficult for college students who have less experience mining transfer information than it is for experienced staff.

In addition to online transfer information being difficult to access or navigate, we found that information online was often out of date. While some participants believed this was the best one could expect, others recognized that it undermines the goals of publicly publishing the information and maintains inequality in information constraints across students and colleges. One participant stated:

Courses change, course sequencing changes, updates to entrance pre-requisites or entrance exams those kinds of things change. So, what's been difficult is keeping up with all of that and so unless you have that personal contact at a university or in a specific division sometimes that's not always the best solution and I think that's one of the hardest things for a community college. (Director of campus's university center, College M)

Up-to-date information—including the current requirements and processes for transfer—is sometimes hidden from the public. Only community college staff (and the students routinely meeting with them) are able to access the information necessary to be adequately aware of transfer requirements. Other personnel described the quickly changing nature of transfer information as a reality of the field and came to expect that their college could not provide public access to real-time changes. They placed the blame for out-of-date information on universities for being inconsistent with their own updates and making minimal effort to contact feeder colleges. They also acknowledged the resource constraints at their own community college, where there are not enough staff to keep up with shifting requirements.

The inadequacy of online information. Within the interviews, two main themes emerged illustrating skepticism among transfer personnel regarding the potential of online information to improve transfer. First, some staff members expressed doubt over whether students actually use the information. Second, several

advisors argued that navigating the transfer process requires face-to-face advising—online information alone is insufficient for most students.

Students do not take advantage of online information. Some personnel believed that their college’s online content related to transfer was not problematic, but, rather, that students were not taking advantage of the information offered. One participant explained,

It’s easy to check Facebook every morning, but to actually go on a [community college] website, and figure out what’s going on with transfer stuff. I don’t know that they necessarily take full advantage of that. If you know where to go, it’s really easy to navigate, and check that out.” (Advisor, College K)

In the case of College K, the college website rated high on both ease of access and navigability. The information students need to transfer is available online, should they seek it out. This suggests that students may require prompting to seek out that information. At other colleges where personnel adhered to similar beliefs, the online information was not easy to navigate, which suggests a disconnect between staff’s perception of their online transfer resources and the actual quality of the information that is publicly available.

Overall, most personnel who participated in our study recognized the strengths and limitations of their online information. However, a few did not. One of the colleges, College C, had very navigable transfer information, but it was difficult to locate from the college’s website—we rated it moderately accessible. If students knew where to look, they could find it, but it required navigating from the college’s website to the college system’s website, which was not very intuitive, and included broken links to get there. The administrator we spoke to did not recognize that students may not think to look at the district website for transfer information, as opposed to the local website. College I, on the other hand, offered such sparse information that the transfer page was barely better than offering no information. Initially, the personnel we interviewed acknowledged, “we have a webpage that talks about transfer but I don’t think we have too much information on there.” Yet the staff member also expressed,

[Students] can also go to our college webpage—under advising, toward the end, we have a list of all the universities that oftentimes the students will go to and it’s simply links that they can click on without going to the actual website. Just go to our website and just click on one of those universities that they have interest in. Click on that link and it takes them straight to that page.” (Advisor, College I)

The “transfer-specific” page she referred to linked to four universities’ homepages, which offered no information about transfer resources. Students would then need to completely navigate the university site to find relevant information. This continues to place the burden on students; they must overcome their own information constraints.

Face-to-face advising is necessary. Some advisors argued that one-on-one transfer advising was necessary to disseminate transfer information. Others argued that advising was, at the least, an important supplement to online information. In a college with adequate resources to ensure all students received advising, this perspective might make sense. Most community colleges cannot reach every student through one-on-one advising. More troubling is that transfer information was not offered in orientation or advising sessions at most college, but required students to “opt in” to receive any information through advising. When asked where most students find out about their transfer options, several advisors acknowledged that the dissemination of information only started after students requested it in an advising session:

Well, it’s usually when they approach us in advising. Some may go to the website to see if there’s any information on transferring. But, generally, they come and ask questions. They will just come, [say] I want to transfer, and then that’s when the discussion begins. (Advisor, College I)

Unfortunately, since the transfer process starts with early course selection (Monaghan & Attewell, 2015), this approach puts students who do not realize they need to think about transfer early in college at a clear disadvantage. It also disadvantages students who are reticent about reaching out to an advisor, and those with time constraints that make difficult to meet one in person. At College F (rated low in ease of access and navigability) and College I (rated moderately accessible and low in navigability), it is unlikely that students

could find the information they need about transfer online. Therefore, if they do not ask for the information, they likely will not receive it.

Discussion and Implications

Accessible and navigable online transfer information is one way to ensure that all college students have access to at least some form of information to navigate transfer. Extant research suggests that some students, particularly those with fewer financial and social resources, are disproportionately impacted by the bureaucratic hurdles and information constraints related to navigating college (Crisp & Nuñez, 2014; Dougherty & Kiezl, 2007). In this project, we examined the extent to which community colleges make transfer information easy to find and whether it is sufficiently clear and complete to guide students through transfer options and requirements. The findings presented here illustrate that many community colleges could improve the ease of access and navigability of the information they present to students about transfer. We contribute to the literature by illustrating not only the variation in the quality of online transfer information, but also by incorporating the perspective of community college advisors and administrators. The interviews illuminate additional hurdles to the public display of information—primarily, how do we increase students’ awareness of this information? The interviews demonstrate how the perspectives of staff at a given institution may shape the presentation of information to students. Colleges that prefer face-to-face advising seem to invest fewer resources into presenting information online (this occurred more at colleges with low or moderate ease of access and navigability).

Community college students are disadvantaged when their community college does not maintain detailed online information about transfer pathways and services. Interested students would have to know to come in in person for help navigating the transfer process and websites of universities of interest. The findings from the website review further support Rosenbaum et al.’s (2007) discussion of the hidden curriculum of transfer. Colleges that provide accessible and navigable transfer information enable all students a chance to understand the requirements for transfer. Colleges that do not meet the highest standard on our rubric (over half

the colleges in the state fall below a 5 on at least one standard) may exacerbate inequality in educational opportunity. To assuage these concerns and improve online transfer information, institutions might use the framework provided by our rubric to guide their assessment of online transfer information provided to students.

Our results also highlight challenges associated with bilateral transfer agreements. In a decentralized postsecondary context like Texas, students need to know about the varying requirements at different potential destination colleges (they cannot assume that their lower-division coursework will apply in the same way to degrees at different institutions). Given all of the possible combinations of programs and universities, it is impossible for advisors and students to be well informed about every option. Ultimately, most community college personnel and students rely on online resources from universities to help students navigate transfer requirements and to develop course plans. This puts tremendous weight on the importance of maintaining those webpages, but many institutional representatives acknowledge that their webpages are not kept up to date. That may result in prospective transfer students following ill-suited advice in their attempts to comply with the university preferences.

Ensuring the success of community colleges students has the potential to improve labor market and life outcomes in the state of Texas. In order to transfer from a Texas community college to a public university, students must make informed decisions, foreseeing a variety of potential educational pipelines. To avoid wasted money and time, the current system requires that students enter the community college with a lot of information (ideally, they would already know which major and destination university to pursue). In this context, even the savviest students—those who know precisely which program they hope to earn a degree in—may come up against barriers to transfer and bachelor's degree attainment if they face any information constraints along the way. The cost of missteps is high: students run the risk of wasting money and time taking classes that will not contribute toward a degree if they fail to follow the necessary recommendations to transfer to a desired 4-year institution. Ultimately, a system where information is not publicly posted—or is not adequately detailed or

coherently presented—puts a great deal of burden on students and undermines the goals of postsecondary institutions to improve the outcomes of their student body.

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Table A1

Institutional Measures and Data Sources for Table 1

| Measure | Source | Description |
|---------------------------------|-----------------|--|
| Campus Context | | |
| Campus setting | NCES (2017) | A measure of the urbanicity of the college setting, where Rural = “Census-defined rural territory that ranges in distance from less than 5 miles to more than 25 miles from an urbanized area, as well as being less than 2.5 miles to more than 10 miles from an urban cluster;” Town = “Territory inside an urban cluster that ranges in distance of less than 10 miles to more than 35 miles from an urbanized area with a population ranging from less than 100,000 to one of more than 250,000;” Suburban = “Territory inside an urban cluster that ranges in distance of less than 10 miles to more than 35 miles from an urbanized area”. City = “Territory inside an urbanized area and inside a principal city with a population ranging from less than 100,000 to one more than 250,000” (NCES, 2017). |
| 4-year colleges within 50 miles | NCES (2017) | Measure of the number of 4-year colleges within 50 miles radius of the community college. Information obtained from institutional profiles on NCES’s college navigator, which relies on IPEDS data. |
| Student Characteristics | | |
| Undergraduates | THECB (2017) | Total undergraduate enrollment, rounded to the nearest 10, in fall 2015. Obtained from institutional profiles on THECB’s institutional resume generator, which relies on statewide data collection. |
| Part-time | NCES (2017) | Percentage of “student[s] enrolled for either less than 12 semester or quarter credits, or less than 24 contact hours a week each term.” Information obtained from institutional profiles on NCES’s college navigator, which relies on IPEDS data. |
| Female | NCES (2017) | Information obtained from institutional profiles on NCES’s college navigator, which relies on IPEDS data. |
| Age 25+ | NCES (2017) | Information obtained from institutional profiles on NCES’s college navigator, which relies on IPEDS data. |
| In-state | NCES (2017) | Percentage of “residence data are reported for first-time degree/certificate-seeking undergraduates.” Information obtained from institutional profiles on NCES’s college navigator, which relies on IPEDS data. |
| Distance learners | NCES (2017) | Percentage of “undergraduates enrolled entirely or partially in distance education as fall 2015.” Information obtained from institutional profiles on NCES’s college navigator, which relies on IPEDS data. |
| Students of color | THECB (2017) | Percentage of students who identify as Hispanic, African American, Asian/Pacific Isl. International, Other & Unknown backgrounds. Obtained from institutional profiles on THECB’s institutional resume generator, which relies on statewide data collection. |
| Pell recipients | THECB (2017) | Percentage of students who received a federal Pell Grant in FY 2015. Obtained from institutional profiles on THECB’s institutional resume generator, which relies on statewide data collection. |

Credentials and Course Completion

| | | |
|------------------|-----------------|---|
| Associate degree | THECB (2017) | Number of associate degrees awarded in 2016, rounded to the nearest 10. Obtained from institutional profiles on THECB's institutional resume generator, which relies on statewide data collection. |
| Core completer | THECB (2017) | Number of students awarded core complete recognition in 2016, rounded to the nearest 10. Obtained from institutional profiles on THECB's institutional resume generator, which relies on statewide data collection. |

Transfer Outcomes

| | | |
|-----------------------------------|---------------|---|
| Low transfer-out rate | NSC (2014) | Dichotomous measure indicating that percentage of students who transferred to a 4-year institution from this college was among the lowest in the state. Obtained from fall 2007 entry cohort data obtained from the National Student Clearinghouse, which was narrowed to enrollees at Texas community colleges (the data is not publicly available and was obtained through a data agreement between CCRC and NSC). |
| High transfer-out, high BA rate | NSC (2014) | Dichotomous measure indicating that college was in the top half of the colleges in the state in terms of transfer out rate (percentage of students who transferred to a 4-year institution was above average) and the college demonstrated the highest percent of students who earned a bachelor's degree within 6 years of initial college entry. Obtained from fall 2007 entry cohort data obtained from the National Student Clearinghouse, which was narrowed to enrollees at Texas community colleges. |
| High transfer-out, modest BA rate | NSC (2014) | Dichotomous measure indicating that college was in the top half of the colleges in the state in terms of transfer out rate (percentage of students who transferred to a 4-year institution was above average). Obtained from fall 2007 entry cohort data obtained from the National Student Clearinghouse, which was narrowed to enrollees at Texas community colleges. |
| High transfer-out, low BA rate | NSC (2014) | Dichotomous measure indicating that college was in the top half of the colleges in the state in terms of transfer out rate (percentage of students who transferred to a 4-year institution was above average), but, among those colleges, had the lowest percent of students who earned a bachelor's degree within 6 years of initial college entry. Obtained from fall 2007 entry cohort data obtained from the National Student Clearinghouse, which was narrowed to enrollees at Texas community colleges. |
