

The Multiple Dimensions of Transfer: Examining the Transfer Function in American Higher Education

Community College Review

2017, Vol. 45(4) 273–293

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DOI: 10.1177/0091552117725177

journals.sagepub.com/home/crw

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Abstract

Purpose: This article examines the literature on the transfer function in American higher education, and it reviews three primary dimensions of transfer: (a) the transfer function and pathways, (b) transfer access and experiences, and (c) state transfer policy. **Argument:** This literature review engages core transfer concepts and we argue that the literature is dominated by the vertical transfer pathway, despite multiple transfer pathways and definitions. The research also suggests that students' transfer experiences and outcomes are not equal, institutional cultures and policies are not designed to support diverse students, and the inadequate transfer structures and policies need to be reformed to improve transfer outcomes for students of color, low-income students, and first-generation students. Finally, we argue that the nature and distribution of state transfer policies is uneven and the impact of state transfer policies on student outcomes is mixed, so we know little about their efficacy. **Conclusion:** We conclude the article with a set of priorities for future transfer research that address gaps and limitations of the existing literature.

Keywords

community college, equity, literature review, transfer, vertical transfer, state policy

Since their founding in the early 1900s, a primary function of the community college sector has been the transfer function (Cohen, Brawer, & Kisker, 2014). University of Chicago President, William Rainey Harper's vision was for students to begin college

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at a junior college and transfer to a 4-year institution where they engage in their academic major coursework (Brint & Karabel, 1989; Cohen et al., 2014). Indeed, many community colleges design their curriculum and programs with the assumption that students desire to and will transfer to a 4-year institution.

Community colleges are among the most diverse institutions in American higher education (American Association of Community Colleges, 2016). This diversity manifests itself in multiple forms, such as the various types of students that community colleges serve, the leadership they employ, and the resources and curriculum they provide for the community (Bailey & Morest, 2006; Long, 2016; Provasnik & Planty, 2008). Many underserved students, including women, first-generation students, low-income students, and students of color rely on the community college to access higher education and a baccalaureate degree pathway (Handel, 2013; Ornelas & Solorzano, 2004). The vertical transfer pathway—transfer from a 2-year to 4-year college—is a critical function of the American higher education system, but this review describes other forms of transfer such as lateral transfer, reverse transfer, swirling, reverse credit transfer, and dual credit, which represent a much broader and expansive set of transfer pathways.

Today's college student is very likely to transfer institutions or credits, elevating the role of transfer in the postsecondary ecosystem. Nationally representative data from the Beginning Postsecondary Study (BPS) and data from the National Student Clearinghouse (NSC) suggest that approximately one third of first-time college students transfer institutions or co-enroll at least once within 5 to 6 years of initial enrollment (Hossler et al., 2012; United States Department of Education, 2017a). Of the approximately 33% of students who transferred, 25% transferred more than once and 27% transferred across state borders (Hossler et al., 2012). Data on the mobility of bachelor's degree recipients show that nearly half (46%) attended a community college prior to receiving their bachelor's degree (NSC, 2015). These data all suggest that student transfer and mobility is a predominant feature of the American higher education system and college student experience, and that policy and practice must adapt to transfer student patterns.

The purpose of this literature review is to examine three distinct dimensions of transfer: (a) the transfer function and pathways, (b) transfer access and experiences, and (c) state transfer policy. These three dimensions do not encompass the entire spectrum of transfer literature, but they reflect significant dimensions of existing scholarship and reflect the priorities articulated in a recent white paper prepared by transfer researchers (Bragg, Taylor, Giani, & Soler, 2016). In 2016, the Bill and Melinda Gates Foundation convened researchers to identify and explore existing scholarship on transfer. Participating in the meeting were 17 researchers who represented 14 different universities or research organizations, and all researchers have established track records of publishing on transfer and mobility. Although the three dimensions examined in this article emerged organically from the convening, we carefully reviewed the literature and foundational texts (e.g., Brint & Karabel, 1989; Cohen et al., 2014; Dougherty, 1994; Handel, 2013), and we found these three themes were salient and robust areas of transfer scholarship and a viable organizational framework for the review. Our method for the literature review included reexamining foundational texts

on community colleges and transfer, reviewing recent peer-reviewed literature largely within higher education and education journals, and reviewing policy reports and briefs from foundations, government agencies, and research and policy organizations. We reviewed several scholarly databases (e.g., ERIC, JSTOR) for relevant search terms including “transfer,” “transfer function,” “transfer pathways,” “transfer gap,” “transfer experiences,” and “transfer policy.”

The first section of the literature review, the transfer function and pathways, answers four specific questions: (a) What is the transfer function? (b) What are the different types of transfer? (c) Why do students transfer? and (d) How effective and efficient are transfer pathways? The second section of the literature review—transfer access and experiences—answers two specific questions: (a) What is the vertical transfer gap? and (b) What is the racial transfer gap? The final section of the literature review, state transfer policy, answers two specific questions: (a) What state transfer policies regulate transfer and articulation? and (b) How effective are state transfer policies? In the final section, we draw from the literature to propose a future research agenda for transfer.

The Transfer Function and Pathways

The dominant conception of the transfer function in American higher education is arguably the vertical transfer pathway. Many scholars have defined vertical transfer as a primary mission of the community college (Cohen et al., 2014; Cross, 1985; Handel, 2013; Mullin, 2012). Cross (1985) noted that community colleges with a transfer function would

. . . offer the liberal arts courses needed for transfer to four-year institutions, stress student retention, offer transfer counseling services, conduct follow-up studies of students transferring to four-year colleges to see how well they performed, accept performance on standardized academic achievement tests as a critical dimension of quality, and develop opportunities for faculty members to articulate course content with their department peers in four-year colleges. (p. 38)

This transfer function and the vertical pathway represent an ideal route from an organizational and administrative perspective, yet data on students’ transfer and mobility patterns in higher education reflect a different reality.

Research on student mobility suggests that student pathways are diverse and variable. Indeed, when quantifying transfer activity within the higher education ecosystem, vertical transfer is the exception rather than the rule. A recent study by the NSC examined a cohort of first-time fall 2006 students and found that approximately 900,000 students (33%) transferred institutions at least once during the 5-year study (Hossler et al., 2012). Of these transfer students, only 29% transferred from a 2-year institution to a 4-year institution as their first transfer. The remaining 71% of students transferred laterally from a 2-year to 2-year (19%) or 4-year to 4-year (26%) or in reverse from a 4-year to 2-year (26%).¹ The study illustrates that vertical transfer students are *not* the majority of transfer students, and suggests the need for a greater focus on and understanding of different transfer types.

Table 1. Transfer Patterns, Terms, and Definition(s).

Transfer patterns and terms	Definition(s)
Vertical transfer	Students who begin at a 2-year and transfer to a 4-year with or without an associate's degree (Townsend, 2001).
Lateral transfer	Students who transfer from a 2-year institution to a 2-year institution, or a 4-year institution to a 4-year institution (Bahr, 2009).
Reverse transfer	Students who begin at a 4-year and transfer to a 2-year institution, including undergraduate reverse transfer students, postbaccalaureate reverse transfer students, double reverse transfer students, and summer sessioners (Hagedorn & Castro, 1999; Townsend, 2001; Townsend & Denver, 1999).
Reverse credit transfer	The transfer of credits from a 4-year institution back to a 2-year institution for the purpose of conferring an associate's degree (Taylor, 2016).
Swirlers and alternating enrollees	Students who attend more than two institutions and transfer or who transfer from and to community colleges (Adelman, 2004, 2006; de los Santos & Wright, 1989; Townsend, 2001).
Concurrent enrollees, co-enrollment, double-dipping, simultaneous enrollees	Students who attend more than one institution at the same time and who transfer courses (Adelman, 2004, 2006; Crisp, 2013; McCormick, 2003; Townsend, 2001; Wang & Wickersham, 2014).
Dual credit, dual enrollment	Transfer of college-level courses taken during high school.
Transient	Students who take courses as nondegree seeking students at institutions other than home institution with intention to transfer credits to home institution (McCormick, 2003).

Note. These transfer terms are commonly used in the literature. We recognize these terms could be interpreted as hierarchical, deficit, and/or problematic, and we advocate for the development of critical and appropriate language to describe transfer patterns and experiences.

Source. Adapted from Taylor (2016).

Transfer Types and Pathways

The literature lacks a comprehensive typology and account of transfer types and patterns. The most comprehensive review is Townsend's (2001) article, which identified six transfer patterns, but her review does not account for more recent policy developments such as reverse credit transfer, nor does the review adequately decipher between the movement of students, or student transfer, and the movement of credits, or credit transfer. In a recent review, Taylor (2016) offered eight common categories of transfer patterns and pathways based on existing literature, and these are displayed in Table 1. These eight patterns are: vertical transfer; lateral transfer; reverse transfer; reverse credit transfer; swirlers and alternating enrollees; concurrent enrollees, co-enrollment, double-dipping, simultaneous enrollees; dual credit, dual enrollment; and transient.

Although this review summarizes common transfer patterns and types, it is not exhaustive because it does not include important credit transfer programs such as the transfer of military credits, international transfer of credits, and the conferral of credits for competency-based education. Our review suggests that the preponderance of literature continues to be dominated by the vertical transfer pathway,² and although it plays a critical role in American higher education, the transfer function must be conceptualized beyond vertical transfer. Research and policy should engage a more diverse and expansive set of transfer policies and practices.

Understanding Transfer Decisions

Situating the literature within student departure reveals that many students transfer or depart their initial institution for reasons unrelated to academic purposes, which has implications for policy and practice. Data from BPS 2004-2009 provide a nationally representative portrait of why students transfer. On average, students' reported reasons for transferring from their first institution were as follows: pursue bachelor's degree (57%), personal reasons (38%), finished classes (28%), other reasons (19%), scheduling problem (18%), not satisfied (17%), financial reasons (11%), family responsibilities (6%), and academic problems (3%) (United States Department of Education, 2017b). The reasons that students report transferring vary by level of institution. For example, 82% of students who transferred from a 2-year institution indicated they transferred because they intended to pursue a bachelor's degree compared with only 25% of students who transferred from a 4-year institution. The BPS data corroborate studies on reasons for lateral transfer (i.e., transfer between 4-year institutions), which suggest students transfer for reasons such as social circumstances, relocation, fit, proximity to home, and strategic moves (Bahr, 2012; Washington Higher Education Coordinating Board, 2009). The fact that many students transfer for personal reasons or reasons unrelated to academic factors suggests that despite leaders' and policymakers' best intentions to design seamless and linear transfer pathways, student behavior will not always follow these pathways. Transfer pathways and policies need to be flexible enough to accommodate students' dynamic personal lives and should not penalize students for not following an administratively ideal path.

Inefficient and Ineffective Transfer Pathways

Transfer pathways, particularly the vertical pathway, are intended to support students' transition and ensure student success. However, previous research shows that transfer pathways are often inefficient and ineffective (Horn & Skomsvold, 2011; Monaghan & Attewell, 2015; Townsend & Wilson, 2006). The purpose of this section is not to argue that transfer does not work for all students, but rather to identify ways in which transfer and articulation policies and practices fall short of their potential. In this section, three critical dimensions of inefficient and ineffective transfer pathways are reviewed: (a) credit loss, (b) inadequate articulation, and (c) structural and institutional barriers.

The first dimension is credit loss, which refers to the extent to which students lose college credits when they transfer to another institution. Roksa and Keith (2008) argued that many state transfer policies are intended to preserve credits and reduce credit loss in students' transition to a different institution, and various studies have examined the nature and degree of credit loss during transfer (Bowls, 1988; Monaghan & Attewell, 2015; Pincus & DeCamp, 1989). In a recent study that used nationally representative data, Monaghan and Attewell (2015) found that 14% of community college transfers lost more than 90% of their credits after transfer, 58% lost less than 10% of their credits, and 28% lost between 10% and 89% of their credits after transfer. It is important to note that the majority of students lost a relatively small percentage of credits, but a substantial percent of students (14%) also lost a majority of credits. Loss of credit means that students likely need to repeat classes, attend school longer, and spend more money on tuition; these can all negatively affect bachelor's degree completion.

Inadequate articulation is the second dimension of ineffective transfer pathways. The literature suggests that articulation policies and practices often do little to articulate credit beyond core general education courses and are not inclusive of technical degree programs. A total of 36 states have transferrable general education packages, but 14 states do not have these statewide policies (Education Commission of the States [ECS], 2016). In states without these policies, the transfer of general education courses between in-state institutions is dependent on individual agreements between institutions and left to institutional discretion. Similarly, research on the transfer of technical degrees and credits suggests that many applied credits and degree programs, in which community college students often begin their education, do not transfer (Ignash, 1997; Ignash & Kotun, 2005). Ignash (1997) noted that ". . . in most places, these degrees [applied degrees] are still not considered 'equal' to the transfer degrees" (p. 8). Although many states have developed transfer pathways for technical programs, including applied baccalaureate degrees, they are often limited to fields such as nursing, computer science, and engineering (Ignash & Kotun, 2005).

A third and critical dimension of transfer ineffectiveness is attributed to structural and institutional barriers that are symptomatic of a higher education system that was not designed for nor has adapted for the mobile college student. Several barriers emerge from the literature that predominantly represent a failure of institutions to accommodate transfer students and prospective transfer students. First, as previously noted, many transfer students lose credits during the transfer process, which is empirically linked to decreased likelihood of bachelor's degree completion (Monaghan & Attewell, 2015). This loss of credit can be attributed, in part, to the gaps in course articulation among institutions as well as student uncertainty (Hodara, Martinez-Wenzl, Stevens, & Mazzeo, 2016). Second, research suggests that institutions do not: provide adequate information and advising, provide timely and comprehensive academic and social support services, communicate with partner institutions, or provide students financial incentives to prospective transfer students (Bers, Filkins, & McLaughlin, 2001; Dowd, Pak, & Bensimon, 2013; Reyes, 2011; Tobolowsky & Cox, 2012; Townsend & Wilson, 2006).

Third, despite the proliferation of articulation agreements, equally important is developing and maintaining strong community college and university partnerships to

support the transfer function (Kisker, 2007). Efforts that involve and engage faculty are critical to strong partnerships and effective transfer and articulation agreements (Ignash & Townsend, 2000; Kisker, 2007); yet, transfer and articulation is often an administrative process that is separate from faculty responsibilities. Fourth, many transfer students experience differences in expectations between their previous institution and their transfer institution, which can negatively influence their adjustment after transfer, a term often described as *transfer shock* (Cejda, Kaylor, & Rewey, 1998; Hills, 1965; Laanan, 2001). Students experience transfer shock, in part, because institutions do not prepare students to transfer nor support their transition after transfer.

Fifth, an institution's organizational culture and ideology, whether at a 2-year college (Miller, 2013; Shaw & London, 2001) or at a 4-year college (Jain, Bernal, Lucero, Herrera, & Solorzano, 2016), can influence its commitment to transfer and transfer students and in turn influence the success of the transfer function. One example of a transfer sending culture at the 2-year college level is the support and resources that institutions provide toward transfer advising and counseling (Ornelas & Solorzano, 2004). For example, in the California community colleges, which is the largest community college system in the United States, the student-to-counselor ratio ranges from 800:1 to more than 1,800:1 (California Community Colleges Student Success Task Force, 2012). Many scholars have drawn attention to the important role of counselors as transfer agents (Allen, Smith, & Muehleck, 2014; Bahr, 2008; Orozco, Alvarez, & Gutkin, 2010), although research shows students have found issues with accessibility, individuation, and accuracy of information when seeking academic guidance (Allen et al., 2014) or they have not found counselors not to be validating (Dowd et al., 2013).

A transfer receptive culture at the 4-year college is defined as an institutional commitment that assists students pre- and post-transfer with navigating the community college, guidance with coursework, the university application process, enrollment at the 4-year, and addressing the university campus racial climate for transfer students (Jain et al., 2016). For students transferring vertically, experiences prior to transfer and students' prior academic institution have been found to be predictive of student performance and/or adjustment post-transfer (D'Amico, Dika, Elling, Algozzine, & Ginn, 2014; Laanan, 2007; Laanan, Starobin, & Eggleston, 2010) as has the environment at the receiving institution (Bahr, Toth, Thirolf, & Massé, 2013; Laanan, 2007; Laanan et al., 2010). When a 4-year campus does not have a strong transfer receptive culture and does not attempt to partner effectively with community colleges, this can result in ineffective outreach, access, and retention for transfer students (Jain et al., 2016).

Transfer Access and Experiences

A lingering debate in the literature on transfer and community colleges centers around the extent to which the vertical transfer function, via the community college, is actualized or thwarted as evidenced by the vertical transfer gap. As mentioned earlier, vertical transfer is simply one of the many forms of transfer, but research on it has dominated the scholarship on transfer and mobility which warrants our extensive review of it.

The Vertical Transfer Gap

Historically, the community college, via the transfer function, was built and conceptualized as a gatekeeper to 4-year institutions (Brint & Karabel, 1989; Dougherty, 1994). According to Dougherty and Kienzl (2006), however, “. . . during the years between 1960 and 1990, the transfer mission was eclipsed. Community colleges shifted their attention to expanding occupational education and continuing education, and transfer rates declined” (p. 453). In addition, scholars argue that community college students’ transfer aspirations were often *cooled out* and diverted toward other tracks such as terminal certificate programs that could lead to immediate job placement (Clark, 1960; Pincus, 1980). This is what some scholars have argued is the diversionary effect of the community college, whereby community college attendance diverts students away from the transfer pathway or out of college altogether (Brint & Karabel, 1989; Clark, 1960).

A primary indicator of the vertical transfer gap is the difference between the percentage of students who indicate they desire to transfer and the percentage that actually transfer. Nationally representative data show that approximately 80% of first-time community college students intend to earn a bachelor’s degree or higher, but only 23% transfer within 5 years (Horn & Skomsvold, 2011). Indeed, empirical research shows that community college enrollment can reduce students’ transfer intentions. Using data from the BPS, Deil-Amen (2006) found that 21% of first-time community college students decreased their intentions from a bachelor’s degree to an associate’s degree or less.³ One process that explains this phenomenon is what Clark (1960) described as the the cooling-out process whereby community colleges “let down [transfer] hopes gently and unexplosively” (p. 574).

Although there is a gap between transfer aspirations and reality, the research has documented disparities in the vertical transfer gap based on students’ background and prior schooling. Research shows that community college students are less likely to transfer if they attended under-resourced high schools that did not adequately prepare them for college, if their parents did not attend or complete higher education, if they are older, or if they did not come from wealthy families with stable incomes (Dougherty & Kienzl, 2006; Dowd, 2007; Wood, Nevarez, & Hilton, 2011). In addition, community college students who attend part-time or have dependents are less likely to transfer than their peers (Wood et al., 2011). These student characteristics are not absolute markers of transfer; however, both community colleges and 4-year institutions have not adequately addressed how to adapt their sending and receiving cultures to diverse students (Jain, Herrera, Bernal, & Solorzano, 2011). Ultimately, the vertical transfer gap is widened for students who do not fit the mold of a traditional student (Rendón, 2002) and differs by socioeconomic status, gender, and various life experiences (Wood et al., 2011).

The Racial Transfer Gap

The aforementioned disparities in the vertical transfer gap are noteworthy, but race is also a salient factor in the vertical transfer experience and is a disparity that has been documented extensively in the literature (Crisp & Nuñez, 2014; Dowd, 2007; Hagedorn & Lester, 2007; Jain et al., 2011; Perez & Ceja, 2010; Rivas, Perez, Alvarez, &

Solorzano, 2007). More than half of all Native American, Latinx, and Black undergraduates, and nearly half of all Asian American students across the nation enroll in community colleges (American Association of Community Colleges, 2016). A considerable amount of research demonstrates that identifying as a White student or as a student of color matters in the transfer process (Crisp & Nuñez, 2014; Gándara, Alvarado, Driscoll, & Orfield, 2012; Harris & Wood, 2013; Lew, Chang, & Wang, 2005).

Crisp and Nuñez (2014) coined the term *racial transfer gap*, a term that identifies an inequity in vertical transfer rates based on race. They used two national datasets to examine the racial transfer gap and found 45% of White community college students transferred compared with only 32% of African American and Latinx students, a 13% gap. In an analysis of data from the California Community College System, Wassmer, Moore, and Shulock (2004) found that community colleges with higher Latinx or African American student populations had lower transfer rates, even after controlling for students' academic preparation and socioeconomic status. Most notably, Wood et al. (2011) used data from the National Postsecondary Student Aid Study dataset and found that White community college students were 71% more likely to transfer than students of color.

The majority of studies that examine inequity and transfer are quantitative studies, with a few qualitative studies that explore transfer from an experiential lens (Bensimon & Dowd, 2009; Castro & Cortez, 2016; Dowd et al., 2013; Jackson, 2013; Reyes, 2011; Tobolowsky & Cox, 2012; Townsend & Wilson, 2006). These qualitative studies allow for students to speak directly about their racialized experiences of transfer. For instance, Bensimon and Dowd (2009) and Dowd et al. (2013) explicitly sought to uncover the experiences of diverse transfer students while navigating the transfer pathway and found that transfer agents played a significant role in the selectivity of the receiving transfer institution and they served as positive and affirming authority figures to students. Urias, Falcon, Harris, and Wood (2017) explored the narratives of men of color transfer students and also found that people, more than programs, were instrumental to students' academic success, and that the men of color in their study relied heavily on other men of color for positive peer support after transferring. Further, Jain et al. (2011) found that university outreach initiatives with an explicit racialized focus were beneficial to prospective transfer students of color because students were able to learn from successful transfer students with similar backgrounds.

Collectively, the literature reviewed in this section shows the large gap between community college students' vertical transfer aspirations and the likelihood those aspirations will be realized, and that students' identity and background play a significant role in their ability to transfer successfully. However, students' identity and background are not the sole determinants of transfer. The institutional transfer barriers previously mentioned and state transfer policies also represent structural barriers that can impede students' ability to transfer.

State Transfer Policy

State policy is a significant factor in the governance and coordination of higher education policy, and it has long shaped the transfer function. What follows is a summary of

transfer policies that govern and regulate transfer and articulation at the state level followed by a review of literature on the effectiveness of state transfer policies.

State Transfer Policy Dimensions and Designs

Transfer and articulation agreements were developed locally since the beginning of the 2-year college, but it was not until the 1970s that state legislation began to facilitate transfer and articulation (Kintzer & Wattenbarger, 1985). Early versions of these agreements, particularly in states with “formal and legally-based” agreements, facilitated the transfer of general education requirements, determined which institutions could offer certain courses, and included policies about articulation services (Kintzer & Wattenbarger, 1985, p. 22). Since Kintzer and Wattenbarger’s (1985) early analysis, studies on state transfer policy and articulation agreements have analyzed the nature of these agreements and, to a limited extent, the effect of agreements. For example, Ignash and Townsend (2000) assessed state articulation agreements using four measures: the transfer directions covered by the agreements, the types of institutional sectors included in the agreements, the degree-related components that ease transfer, and faculty involvement in designing and maintaining agreements. Based on an analysis of the 34 states that had statewide articulation agreements, they found that the majority of agreements covered only 2-year to 4-year transfer within the public sector, facilitated the transfer of Associate of Science or Associate of Arts degrees (not applied degrees), and predominantly focused on the transfer of core general education courses and not program majors.

Articulation agreements often serve as an overarching policy mechanism to facilitate transfer, but state transfer policy and practice is broader than articulation agreements. Researchers and policy analysts have identified several distinct dimensions of state policy that regulate and influence transfer (e.g., Bautsch, 2013; ECS, 2016; Garcia, 2015; Kisker, Wagoner, & Cohen, 2012; National Conference of State Legislatures [NCSL], 2015; Smith, 2010; Taylor, 2016; Townsend, Bragg, & Ruud, 2008; Western Interstate Commission for Higher Education [WICHE], 2010). Table 2 articulates each policy dimension and offers a brief description illustrating that state transfer policies have multiple dimensions. Given the multiple and diverse dimensions of state transfer policies, state transfer context and policies vary greatly, and it is likely student experiences do as well.

Analysis and Effectiveness of State Transfer Policies

Despite the proliferation of state transfer policies, there is minimal research or evaluation of state transfer policies, either within or between states. Only a small number of quantitative and qualitative studies have analyzed or assessed the efficacy of these policies. Only four studies that examined the impact of state transfer policies using national datasets were identified in the literature, and all four used the vertical transfer rates as the dependent variable. Anderson, Sun, and Alfonso (2006) used the BPS 1989-1994 to examine the impact of state articulation agreements and found that after

Table 2. State Transfer Policies and Policy Descriptions.

Policy dimension	Description/definition
Common Core curricula and general education packages	Fully transferrable general education courses across all public institutions (ECS, 2016).
State legislation or statute	State statute or legislation that governs transfer or a portion of transfer. As of 2010, 36 states had state legislation or statute (Smith, 2010).
Common course numbering	A common numbering system for lower division courses at public institutions. As of 2016, 16 states have common course numbering systems (ECS, 2016).
Community college and applied baccalaureate degrees	Policies that help ensure transferability of technical courses to allow for students with applied associate's degrees to transfer to a bachelor's degree program, currently offered in 39 states (Townsend, Bragg, & Ruud, 2008).
Guaranteed transfer of an associate's degree	Policies often ensure credit transferability, waiving of general education requirements at the transfer institution, and admission with junior standing. As of 2016, 31 states have this policy (ECS, 2016).
Reverse credit transfer	Policies that allow for transfer of credit from a 4-year to a 2-year for the purpose of conferring transfer students an associate's degree (Taylor, 2016), currently available in 49 states with 13 states with legislative policies (Garcia, 2015).
Statewide articulation guides and websites	ECS (2016) reports that 35 states have statewide guides that provide information to students and families about the mechanics of transfer and transfer requirements.
Student incentives and rewards	Policies that incentivize transfer through priority or guaranteed admission, waiving institution-specific general education requirements, providing junior status, and transfer scholarships; 22 states have such policies (Smith, 2010); 18 states have performance-based funding formulas that include transfer metrics (NCSL, 2015).
Transfer associate's degrees	State pathways and programs whereby students earn an associate's degree and seamlessly transfer from 2-year to 4-year with junior status, currently implemented or under development in 10 states (Kisker, Wagoner, & Cohen, 2012).
Transfer data reporting	Policies that require data tracking on transfer and mobility; in place or under development in 37 states (ECS, 2016).
Transfer pathways and program major articulation	Policies that allow for seamless transfer from 2-year to 4-year within a specific pathway or program of study (Bautsch, 2013; WICHE, 2010).

controlling for several student-level covariates, states' presence of articulation agreements had no impact on students' likelihood of transferring. They not only speculated that the null effect might be due to immature policies that were recently implemented but also argued that solely relying on state-level compulsory policy instruments may not yield the desired outcomes. Gross and Goldhaber (2009) used the NELS and the Integrated Postsecondary Education Data System (IPEDS) datasets and modeled the influence of several configurations of state transfer policies, including the overall presence of articulation agreements, the strength of state transfer policy, and individual policy components. Across all models, they found no evidence that state transfer policies influenced students' likelihood of vertical transfer. However, their subgroup

analysis found that Hispanic students were more likely to transfer in states with articulation agreements compared to states without articulation agreements.

Kienzl, Wesaw, and Kumar (2011) used the BPS 2004–2009 dataset and found no difference in transfer rates between students in states with and without state articulation policies. In fact, the presence of a state articulation policy was negatively associated with vertical transfer for students earning an associate's degree at the 2-year institution. In a more recent analysis also using the BPS 2004–2009 dataset, LaSota and Zumeta (2015) used multilevel modeling and found that statewide transfer guides (i.e., guides that describe transfer and articulation requirements and answer student questions) were positive and significant predictors of community college students' likelihood of transferring to a 4-year institution, and that common course numbering was a positive and significant predictor of transfer for first-generation students.

Roksa and Keith (2008) departed from other scholars by measuring outcomes other than vertical transfer rates; they argued that articulation agreements were not designed to increase transfer rates but to decrease credit loss. They used NELS data and multivariate regression analysis and found that the presence of state articulation agreements was not a statistically significant predictor of transfer students' bachelor's degree attainment, time to bachelor's degree, or credits to bachelor's degree. Roksa and Keith speculated that the null results may be due to differences in state policy goals, the disconnect between policy intent and policy implementation, or complicated articulation systems that may be counterproductive.

Beyond these studies that use national datasets, three studies have estimated the impact of transfer policies within a state. In an analysis of California's 2010 legislation that created Associate Degrees for Transfer, Baker (2016) found that California's policy significantly increased the number of associate's degrees conferred but did not yet have a significant effect on likelihood of students transferring from a community college to 4-year institution. The second study is based on Washington State's Associate of Science–Transfer (AS-T) degree that was designed to provide a better transfer pathway for science and engineering students than the state's existing Direct Transfer Associate (DTA) degree. The Washington State Board for Community and Technical Colleges' (WSBCTC) study found that students who completed the AS-T degree completed the degree with fewer credits and had higher transfer rates than students who completed a STEM Focused DTA degree; however, the study was descriptive and did not control for other factors that might influence the outcomes (WSBCTC, 2014). The third study examined the influence of Tennessee's general education cluster and found that completing the general education cluster prior to transfer was a significant predictor of college grade point average (GPA), bachelor's degree completion, and time to bachelor's degree (Tennessee Higher Education Commission, 2012).

A small number of studies have used critical theory and critical analysis to examine transfer policies. Chase, Dowd, Pazich, and Bensimon (2012) used critical policy analysis to examine state transfer policies in seven states to understand how the needs of minoritized groups are addressed by state transfer policy and accountability instruments. They found that nearly all state transfer policies—transfer legislation and regulations—were color-blind, with the exception of California. They argued that the

absence and disregard for inequitable transfer outcomes is perpetuated by the color-blind policies. Although they found that race and ethnicity were likely to be embedded in state accountability indicators or strategic planning documents, they observed a disconnect between legislation and accountability instruments whereby equity goals were evident in planning documents, but accountability policies and systems did not include transfer to address equity goals. In a second study, Chase (2011) also used critical policy analysis to examine transfer policies for technical credit transfer in Ohio, Texas, Washington, and Wisconsin. Chase found that state legal codes, which are often decades old, can restrict transfer opportunities for technical students by limiting the number of allowable transfer programs. Similarly, Chase found that policies limit the transferability of technical credit, which, in turn, limits transfer opportunities for technical students and increases credit loss.

Another subset of studies have examined the policy process related to transfer, policy, and environmental conditions that facilitate state-level transfer and articulation. For example, Kisker et al. (2012) examined transfer reform in four states and identified five themes that supported transfer and articulation reform for transfer associate's degrees: legislative action as driver; presidential leadership and state-wide governance or coordination; clear, ongoing organizational structure; the autonomy versus efficiency balancing act; and building trust and allaying fears through faculty-driven processes. Wellman (2002) reviewed and assessed transfer policy in six states and found that both structural policies (e.g., conditions that affect all of postsecondary education such as governance, accountability reporting, funding, incentives, etc.) and academic policies specific to 2-year to 4-year transfer (e.g., core curriculum, articulation agreements, etc.) influence transfer outcomes. Wellman argued that state policies that go beyond academic policies and have comprehensive and integrated approaches to transfer are more likely to influence diversity and higher education mobility.

The evidence and research on state transfer policy portrays a mixed and incomplete picture. This is likely due, in part, to the varied nature of state transfer policies and their designs. As Bers (2013) noted in her review of state transfer policies and agreements, "What is most evident from this brief overview is the wide variation and complexity in policies and agreements within and across states, systems, and colleges" (p. 24). Most quantitative national studies find null effects of state transfer policies, particularly articulation agreements, which may be due to the variation in state policy. The three quantitative studies of individual state policies are more positive, suggesting that quantitative research on state transfer policies might be most productive when conducted within states rather than between states. Even still, research by Chase (2011) and Chase et al. (2012) illustrated that state transfer policies may be unlikely to reduce long-standing gaps in vertical transfer outcomes for students of color without a more intentional design that is aimed to reduce inequities. Studies on the policy process and conditions provide valuable contextual conditions and policy factors that influence important transfer outcomes. Finally, existing studies on state transfer policy are narrowly focused on vertical transfer, and research is yet to examine more carefully how state policy affects other types of transfer.

Discussion and Future Research

This article has reviewed and assessed several salient pieces of literature on the subject of transfer in higher education, with a particular emphasis on the transfer function and pathways, transfer access and experiences, and state transfer policy. Based on this review, several inferences and observations are worth noting. First, research on vertical transfer continues to dominate the transfer literature, yet transfer manifests itself in a variety of types, patterns, and experiences for which there is little empirical evidence. Second, the transfer function provides vital pathways to degrees for college students, but inadequacies in existing transfer structures and systems need to be addressed to improve transfer outcomes, particularly for students of color, low-income students, and first-generation students. Third, research suggests that students' access to and experiences with transfer are not equal, and existing institutional cultures and policies are not necessarily designed to support them. Fourth, the distribution and nature of state transfer policies are uneven and diverse, which suggests transfer operates differently in various states, and students' transfer experience is conditional upon the state context. Fifth, the evidence on the impact of state transfer policies across states is mixed, but the research within states is more promising. Despite decades of implementation of state transfer policies, little is known about their efficacy and the conditions that promote effective transfer and articulation policies.

The transfer phenomenon may never be entirely effective or efficient because successful transfer requires that an extremely diverse and complex system of higher education function at optimal capacity. Similarly, successful transfer assumes that individuals and organizations are equipped with the best and most complete information; yet, the very nature of American higher education, with its diverse student population and diverse institutional missions and values, suggests that there are multiple ways to realize and approach transfer. Indeed, the historical origins of community colleges show that their original purpose was not to advance social mobility, but to protect institutional autonomy (4-year institutional autonomy and values) at the expense of student aspirations and ambitions (Brint & Karabel, 1989). Institutional autonomy is a tenacious force in American higher education and important in transfer and articulation (Kisker et al., 2012), especially as the delivery of higher education becomes more privatized. The transfer function challenges this force as students attempt to navigate disparate policies, processes, expectations, and institutional cultures. As a result, many policymakers and leaders aim to create more standardization and efficiencies. Without a dramatic change to the autonomous nature of American higher education or a change to the diverse experiences of students, researchers and practitioners should adjust their expectations that transfer operate at optimal levels.

The contemporary context is particularly ripe for a renewed transfer research agenda given the Obama Administration's intense focus on community colleges and the unknown policy direction of the new Trump Administration and the U.S. Department of Education. To advance transfer research, we offer a set of priorities for conducting transfer research and challenge the field to advance scholarship with these considerations:

- Transfer research must extend beyond vertical transfer to advance understandings of diverse transfer patterns, experiences, policies, and practices. Students who swirl, take dual credits in high school, co-enroll, transfer laterally, and transfer in reverse are increasingly a large segment of the undergraduate population, yet very little is known about the causes and consequences of these patterns.
- Decades of transfer policy and practice have resulted in inequities in vertical transfer outcomes, and future research needs to focus not just on documenting inequities but understanding what explains and perpetuates these inequities. Similarly, more research is needed that elevates the voices of marginalized transfer student communities including undocumented students, migrant and immigrant students, first-generation students, veterans, LGBTQ students, and students of color.
- Although state and system policies regulate transfer in most states, more research is needed on the enactment and implementation of policies at the institutional and partnership level. Institutional autonomy is a hallmark of American higher education, and this autonomy translates to institutional cultures and practices that may be more or less conducive to the transfer function. More research is needed on how these institutional cultures facilitate or impede transfer. We recommend that research integrates more perspectives from transfer agents such as counselors and faculty, whose voices are often absent from the literature, as well as use of organizational theory or critical theory that can offer new insights on transfer.
- Existing research has extensively documented the types and rates of transfer, but more research is needed on why students transfer. Given the diverse transfer types, researchers and practitioners need to understand reasons for transfer and mobility outside of vertical transfer patterns. Implementing transfer policies and practices independent of understanding students' decision-making will likely exacerbate existing inequities and inefficiencies in the transfer process.
- Finally, new policies such as guided pathways seek to promote more streamlined and efficient transfer pathways for students from 2-year to 4-year colleges, and research is needed to examine their impact and any unintended consequences that could result from creating more efficiencies, including the potential positive and negative impacts on student decisions, choice, and equity.

To answer these and other pressing questions, we encourage the use of qualitative, quantitative, and critical methods and inquiry; all are needed to make sense of the complex ways that students, institutions, and policy interact to produce results. It is also our hope that these broad research priorities can be addressed in ways that will directly contribute to improved transfer policies and practices.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

Notes

1. Author calculations from Appendix C, Table 11.
2. A limited amount of scholarship examines lateral transfer (Bahr, 2009; Bahr, 2012) and reverse transfer (Hagedorn & Castro, 2009; Townsend & Denver, 1999; Zhang, 2015).
3. Deil-Amen (2006) also observed a “warming-up” effect whereby 18.4% of the sample increased their intentions from an associate’s degree to a bachelor’s degree.

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