Valparaiso University

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Connecting Information Literacy Instruction With Transfer Student Success

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Introduction

Transfer students make up a substantial population on college campuses in the United States. A 2014 report by the National Center for Education Statistics found that 35 percent of first-time undergraduate students sampled had transferred between institutions, or had co-enrolled at multiple institutions, at some point during their undergraduate careers (Simone, 2014, p. 21). Academic librarians involved in outreach and instruction on their campuses recognize the importance of serving transfer students (Phillips & Atwood, 2010) but find scant guidance from the library science literature about how they ought to proceed. This article aims to build on previous transfer student research in order to explore the potential roles for academic libraries in supporting the transfer process.

As university faculty, staff and administrators have worked to serve the growing numbers of transfer students, one question has arisen repeatedly: why do some transfer students persist in their educations, completing a college degree, while many others do not? A great volume of scholarship has examined the factors that contribute to transfer students' success at their new 4-year institutions, i.e. "transfer success." Scholars have examined the influences of demographic factors, such as socioeconomic status (Wang, 2009; Melguizo & Dowd, 2009), gender (Freeman, Conley & Brooks, 2006; Mourad & Hong, 2011), and race and ethnicity (Mourad & Hong; Wang, 2012; Crisp & Nunez, 2014) on whether transfer students stay in school and attain degrees. Research has also examined transfer student persistence through the lenses of attitude and motivation, previous attendance at a community college, academic performance prior to transfer, and extracurricular involvement (Pascarella & Terenzini, 2005; Alfonso, 2006; Townsend, 2007; Long & Kurlaender, 2009; Wang, 2009; Monaghan & Attewell, 2015).

Despite the scholarly attention dedicated to transfer students, the influence of information literacy on transfer success remains wholly unexamined. As redefined in 2015 by the Association for College and Research Libraries, information literacy is "the set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge" (ACRL, 2015). This understanding of information literacy rejects the idea that students are mere consumers of information. Rather, students must be prepared to engage critically with the information landscape, so that they might be fit to create and share new knowledge.

With its emphasis on metacognitive learning and student participation in scholarly conversations, information literacy instruction could be an important component to the formula for why some students persist in college and why others drop out. In fact, from its ideological perspective of valuing students' agency, information literacy has much in common with a key concept in the research on academic success: Tinto's concept of integration. In his seminal works on persistence and dropout from higher education, Tinto (1978, 1993) proposes that a student's level of academic integration plays a large role in whether she/he decides to stay in school. He defines "academic integration" as a subjective sense of fit or belonging a student feels at his or her institution, with regard to

coursework, teaching styles, faculty-student relationships, and other academic aspects. Tinto's work on academic integration lies at the heart of most research on transfer success.

This article seeks to situate information literacy as a factor of academic integration and, consequently, of transfer success. This exploratory study asks whether information literacy instruction might contribute to transfer students' successful integration into the academic environments of their campuses. A review of the literature will result in a framework for understanding how information literacy and academic integration are connected, particularly building off Tinto's (1978, 1993) work on academic integration and off the work of Laanan, Starobin and Eggleston (2010) on transfer student capital. The results of a survey of incoming transfer students at a midsize, comprehensive university are presented and discussed. Information literacy instruction is found to have a positive correlation with transfer students' levels of confidence in completing information-gathering tasks. The survey findings are inconclusive in identifying a significant connection between a transfer student's exposures to information literacy instruction and a sense of belonging on campus. The implications for research and librarianship practice, as well as further opportunities for librarians to play in fostering transfer students' sense of academic integration, are discussed.

Literature Review

Academic Integration

Tinto (1975) coined the twin concepts of academic integration and social integration to explain why some college students voluntarily leave school without finishing a degree. His dropout model conceives of degree-seeking students as being motivated by two major commitments: a *goal commitment*, driving them to pursue a specific academic program; and an *institutional commitment*, motivating them to enroll at a particular college or university (p. 96). For an individual student, these goal and institutional commitments are constantly in flux, waxing and waning in response to her interactions with her university. Tinto's model focuses on voluntary dropout, not academic dismissals. Consequently, the dropout decision is to be viewed as a choice made by a student whose commitments -- goal, institutional, or both -- are sufficiently weakened.

Shaping these goal and institution commitments are the two types of integration. *Social integration* (Tinto, 1973, p. 107) measures a student's sense of social fit, including informal friendships and involvement in extracurricular activities. *Academic integration* (p. 104), on the other hand, encompasses those factors related to curricular pursuits, such as intellectual development and academic performance. Tinto later amended his position and claimed that a student's interactions with faculty members are also a contributing factor to academic integration, rather than to the social model (1993, p.). A thorough review of the literature on defining and measuring academic and social integration is provided by Bahr et al. (2013).

It should be clearly understood that social and academic integration are subjective measures, reflecting students' perceptions of their own fit. Integration is thus distinct from the concepts of involvement (Astin, 1984) and engagement (Kuh, 2001), which are more concerned with the quantifiable amounts of time, energy and activity expended by a student or allocated by the institution. According to Tinto (1993), the most important component of integration is that students find some form of community membership in order to feel connected to campus (p.).

Transfer Success

Scholars have drawn heavily from Tinto's models of integration in trying to understand the factors that lead transfer students to do well and persist at their new institutions ("transfer success"). In recent years, scholarship on transfer students in the United States has proliferated, owing to three major growing pressures: competition among postsecondary institutions; concerns about equitable access to education for students from all backgrounds; and concerns that institutions be accountable for spending and resource use (Bahr et al., 2013, p. 451). While some of this research looks at transfer success from the perspective of institutions and the effects of their policies and actions(Zamani, 2001; Kisker, 2007), most scholars focus on students' academic success, as measured by transfer rates and subsequent retention and degree completion.

This article diverges from most of the literature, in that it makes little distinction between students who transfer from community colleges and those who transfer from other 4-year colleges or universities. An incoming cohort of transfer students is diverse and complex, and yet they all find themselves in the same situation: arriving at a new institution with the benefits of some previous coursework but with the disadvantage of starting all over at integrating into the fabric of a university's social and academic communities. It does not benefit an academic library to try separating apples from oranges when supporting these students; rather, we must develop an understanding of their common needs and of the role that information literacy plays in easing their transition.

Much of the research into transfer success is concerned with students' background characteristics. Wang (2009) investigated data for 786 community college transfer students and found significant demographic influences on transfer success: women were more likely to persist than men, and students from higher socioeconomic statuses were more successful than those from lower-income families (p. 579-80). Other research has found similar influences of gender (Freeman, Conley & Brooks, 2006; Mourad & Hong, 2011) and socioeconomic status (Dougherty & Kienzl, 2006) on successful transfer. Race and ethnicity are also potential factors. Crisp and Nunez (2014) found that, although academic integration was a strong predictor of whether white community college students will transfer to a 4-year institution, the same did not hold true for students from underrepresented minorities. Long and Kurlaender (2009) found that, among students who start at community colleges and transfer to 4-year universities, black students are less likely to complete credits and achieve a baccalaureate degree than

white students (p. 42). Research has focused not only on community college transfers; Kocher and Pascarella (1990) found that, among students who transfer from one 4-year institution to another, black students are more negatively impacted than white students. Scholarship on demographic factors, however, is not all in agreement. Dougherty & Kienzl found gender and race not to be strong predictors of transfer success. Velez and Javalgi (1987) examined transfer among community college students in the 1970s and found that being black or Hispanic made transfer more likely, not less (p. 85). Additionally, their research diverged from Wang's in finding men more likely to transfer than women; Long and Kurlaender also found a transfer advantage among men regarding degree completion (p. 42). The influence of demographics on transfer is inconclusive or, more likely, has morphed alongside social and political forces that have made college more accessible to women and people from historically underrepresented minorities.

Aside from demographics, the literature is much more concerned with the educational experiences that students bring with them to the transfer process. Wang's (2009) research found that transfer students who had completed more academically rigorous high school degrees were more successful than those who had pursued vocational tracks in high school (p. 580). Lee and Frank (1990) found that students who transfer from a 2-year to a 4-year institution are far more likely to have been on an academic curriculum track in high school, as opposed to a general or vocational track (p. 184).

Beyond the issue of college preparation in high school, one of the biggest questions in the literature is whether starting one's post-secondary education at a community college makes transfer success less likely. In explaining this potential risk, Hill's concept of "transfer shock" (1965) has wide currency. He observed an appreciable drop in grades among community college transfer students during their first semesters, a drop from which most students eventually recover and yet one which delays graduation and makes degree completion less likely (p. 209). Transfer shock has been widely supported and criticized in the literature over the past half-century. And yet the question of whether community college attendance may harm students' academic pursuits is still unresolved. Pascarella and Terenzini's (2005) found that starting one's college education at a community college reduced the likelihood of completing a bachelor's degree by 15 - 20%. This finding is supported in other studies (Alfonso, 2006; Long & Kurlaender, 2009; Reynolds, 2012). Melguizo and Dowd (2009) disagreed; they found that, by controlling for differences in socioeconomic status and for state-level transfer policies, the negative effect that starting at a community college has on degree completion disappeared (p. 77).

Transfer Student Capital

Townsend (2007) considered the possible disadvantage that starting at a community college might have and asked why, then, community college might nevertheless be a rational starting point for students seeking a bachelor's degree. Among other advantages, she cited lower tuition costs, proximity to home, and lighter admission requirements (p. 129). She observed that beginning one's education at a community

college is like a "test run": students can start taking classes in a more comfortable setting, to help them determine if going to college is what they really want to do, but at a lower financial cost than at a 4-year university. Indeed, it is just as important to consider the possible advantages of being a transfer student as to consider its drawbacks. Looking at final grades among select courses, Stewart and Martinello (2012) found that students who had transferred from another 4-year university actually scored significantly higher than non-transfer students and were less likely to have failed their first semester (p. 33). The authors suggested that perhaps these transfer students used their experiences from their previous university to outperform their new peers (p. 38).

To understand the various experiences that a student brings to the transfer process, Laanan, Starobin and Eggleston (2010) developed a model of *transfer student capital.* Their model builds off the idea of human capital theory, as articulated by Becker (1993), which holds that formal and informal types of education are a type of investment. The return on educational investment for an individual is a direct improvement to her income, health, and other measures of quality of life. Laanan et al. apply this theory to Pascarella's (1985) general causal model of student learning and cognitive development. Pascarella suggested that a college student's development is influenced by five major variables: the student's background and pre-college experiences; the structural characteristics of the institution; institutional environment; the student's interactions with agents of socialization; and quality of student effort. Pascarella's model affords a holistic view of student success, in which background and pre-college experiences are not sufficient in explaining why some students excel in college. Instead, characteristics of the institution (e.g., faculty-student ratio, advising and enrollment processes), social interactions (e.g., relationships with peers, contact with faculty), and the student's perceptions all play a part.

In applying human capital theory to Pascarella's model, Laanan et al. (2010) recognized that transfer students do not transfer in a vacuum. Rather, they bring with them cumulative experiences about how college works: how to choose a major, how to enroll in classes, how to study for exams, how to interact with faculty members, and other aspects of collegiate life. For many students, these experiences can help them navigate the transfer process and succeed at their new university. The benefit of these previous college experiences is what the authors mean by transfer student capital.

Library Services for Transfer Students

As a group concerned with supporting student learning, it seems logical that academic librarians could have an important role to play in transfer success. Our profession has been at the forefront of recognizing the diversity of undergraduate student experiences and the need to personalize our outreach to different populations, including first-generation students, non-traditional students, international students, and distance students (Meyers-Martin & Lampert, 2013; Cannady, King & Blendinger, 2012; Langer & Kubo, 2015; Needham, Nurse, Parker, Scantlebury and Dick, 2013).

However, until this present issue, library literature on services for transfer students has been scant. Tag (2004) investigated the interest in library instruction among new transfer students. She surveyed incoming transfer students (n=307) at Western Washington University, to ask about their experiences with research resources at their previous institutions. She finds that the vast majority of students had done college-level research at their former colleges, including 98% who had prepared a bibliography and 88.6% who had used a library database (p. 104). This research had been supported by librarians; 73.3% reported having received instruction on how to use the library. Despite their previous experiences with library-supported research, Tag finds that a slight majority (50.8%) of these incoming transfer students were nevertheless interested in receiving information about how to use the library at their new university (p. 105). These findings lead the author to see many opportunities for libraries to serve transfer students better, including marketing library services directly to transfer students and enhancing collaboration between librarians at neighboring 4-year and 2-year schools.

One instance of librarians and faculty collaborating to support transfer students in the classroom is provided by Tipton and Bender (2006). They describe a remedial writing class for under-prepared transfer students, in which a librarian was given multiple class sessions to teach students about research approaches, search strategies, and plagiarism. The extended collaboration with the librarian throughout the semester proved effective, as demonstrated through students' adept research behaviors by the third library session, in comparison to other sections of the same course (p. 399). The authors note the problem of scalability with this type of instructor-librarian collaboration but contend that under-prepared transfer students are a population worthy of such intensive focus, noting "[t]he one-size-fits-all school of education has already failed some of these students more than once" (p. 401).

Phillips and Atwood (2010) investigated the issue at a systemic level, surveying academic libraries throughout Ohio about their instructional support for transfer students. The vast majority of respondents did not offer separate information literacy instruction for transfer students and had no plans to develop any such classes (p. 339). Most libraries surveyed did not see a need to offer library support for transfer students, with only 13% of respondents reporting a need for transfer-specific instruction. The authors cite this fact as evidence that librarians are not familiar with the literature on transfer students, and they call for more dialogue about the role of libraries in supporting transfer.

Conceptual Framework

This article investigates whether information literacy is a factor in transfer students' successful academic integration into their new institutions. It builds off Laanan and colleagues' (2010) concept of transfer student capital, that transfer students bring intellectual resources from their previous college experiences, and assumes that information literacy is one such resource that can benefit a student as she starts coursework at a new institution. The literature shows a probable connection between

information literacy instruction and academic success. Bowles-Terry (2012) found slightly stronger graduating GPA's among undergraduates who had participated in library instruction as compared with those who had not; Booth, Lowe, Tagge, & Stone (2015) found that deeper levels of involvement by librarians in a course led to stronger research and communication skills among students. If information literacy can contribute to transfer student capital, and if transfer student capital supports a student's integration into a new institution, then we can expect transfer students who have received information literacy instruction to have a stronger sense of academic fit at their new institutions than those students with no previous information literacy training. This study addresses the following three research questions:

1. Do information literacy instruction experiences contribute to a student's successful academic integration into their current university?
2. Do previous information literacy instruction experiences contribute to a transfer student's successful academic integration into a new institution?
3. When, and through which channels, do incoming transfer students want to receive information about library resources and the research skills needed at their new universities?

Background

Valparaiso University is a private, comprehensive, primarily undergraduate, master's degree-granting institution located in northwest Indiana. It is an independent Lutheran institution. As of fall 2015, the university had about 4,300 full-time equivalent (FTE) students. There are two libraries serving campus. The law school has its own library, but the rest of campus, and certainly the majority of transfer students, are served by the Christopher Center for Library and Information Resources (CCLIR).

In any given semester, transfer students make up a considerable portion of the university's incoming cohort. In fall 2015, 129 undergraduate students transferred into the university, out of total incoming 872 undergraduates (14.8%). Transfer students receive much of the same support as other prospective and admitted students. Transfer students have a designated admissions counselor with whom they work. Along with the first-year students, incoming transfer students attend a new student orientation, known as FOCUS, in either June or August before fall classes start. Because Valparaiso requires most undergraduates to live on campus through their junior years, many traditionally aged transfer students end up living on campus for at least one year; in fall 2015, 65 of the 129 (50.4%) incoming transfer students lived on campus.

Methods

Survey Design

To investigate the research questions, the author designed an instrument in SurveyMonkey for surveying incoming transfer students at Valparaiso University [Appendix 1]. This survey consisted of three major parts, meant to capture respondents' experiences and attitudes related to their previous institutions (pre-transfer), their experiences and attitudes related to their new university (post-transfer), and their opinions about transfer students' needs and preferences. It also gathered basic demographic information.

The survey asked respondents about their experiences with information literacy instruction, broadly defined, both at their previous institutions and at Valparaiso University. Information literacy experience questions were included in both the Previous Institution and Transfer Institution sections of the survey. Examples of information literacy instruction experiences included attending a traditional instruction session with a librarian, meeting one-on-one with a librarian for research assistance, receiving information about the library during the transfer process, and speaking with a library employee during summer orientation.

The survey also inquired about students' attitudes toward their academic integration, both at their previous institutions and at Valparaiso. These attitudinal questions were based on Tinto's (1975, 1993) work on academic integration, including questions about levels of confidence finding sources, difficulty of the coursework, having access to an academic "support system," and sense of fit.

The author distributed the survey via email to the 129 transfer students who were enrolled in their first semester at Valparaiso University during the fall of 2015. The email included a description of the study, as well as a link to the online survey. The survey was distributed during the fourth week of the semester and remained open for two weeks. This timing allowed for a snapshot of transfer students' attitudes while they were still relatively new to the campus but had had enough time to begin adjusting to a new campus and new routines.

Data Analysis

The author conducted multiple analyses of the survey responses, using inferential statistics (Kim, Sin, & Tsai, 2014). Analysis of variance (ANOVA) and t-tests were used to examine any possible significant relationships between respondents' information literacy experiences and their feelings of academic integration. Respondents' IL instruction experiences were the independent variables; their attitudes toward a sense of academic integration were the dependent variables.

To aid in the analysis of results, each survey question was assigned an alphanumeric code. The letter signifies the section in which the question was asked (D = demographic; P = previous institution; T = transfer institutions; G = transfer students' general preferences), and the number indicates the question order within that survey

section. Hereinafter, the relevant survey questions will be noted by "Q.," followed by the alphanumeric code.

For each experience question, respondents had the options of Yes; No; Not Sure. A "Yes" response was coded as 1, and "No" was coded as 0. For purposes of analysis, the author coded responses of "Not Sure" as "No." This decision removed any ambiguity over the certainty of "Yes" responses.

For most attitude questions, respondents had four Likert scale options, ranging from extreme agreement to extreme disagreement. For example, for Q. P4 and Q. T4, related to confidence in finding sources, respondents had the options: *Very confident*; *Somewhat confident*; *Not very confident*; *Not at all confident.* For Q. P6 and Q. T6, about feeling connected to a system of academic support resources, respondents had the options: *Yes, I feel very connected to an academic support system*; *Yes, I feel somewhat connected...* ; *No, I feel somewhat disconnected...* ; *No, I feel completely disconnected...* The author assigned each of these scales a value, with extreme disagreement having a value of 1 and extreme agreement having a value of 4 (Murray, 2015, p. 477). The final attitudinal questions, Q. P7 and Q. T7, asked a simple question about whether a university was a good fit for the respondent, with the options of *Yes* or *No*; these responses were coded as either 1 or 0, respectively.

Results

Respondent Demographics

37 incoming transfer students completed the entire survey, with 1 additional student answering the first two sections of the survey, for a response rate of 29.46%. Nearly 66% of respondents were female, and 34% were male. The largest age group was 20- to 21-year olds, at 42.1%, suggesting an age range typical of traditional upperclassmen. The majority (57.9%, n= 22) had transferred from community colleges or other two-year institutions, with a sizable minority (36.8%, n= 14) coming from other four-year U.S. institutions, and just 5.3% (n= 2) coming from international institutions. 52.6% (n=20) of respondents identified as commuter students.

Respondents' Experiences With IL Instruction

Most responding transfer students had not received information literacy instruction at their previous institutions. Only 42.1% (n = 16) reported having participated in formal IL instruction, with a librarian speaking directly to their classes, at their previous institutions (Q. P1). Only 21.1% (n = 8) had worked directly with a librarian to receive help on an assignment (Q. P3). Most students, however, had received some sort of instruction on basic use of the library, with 60.5% (n = 23) reporting that someone from their previous library had shown them how to use the website for research (Q. P2).

After transferring to Valparaiso University, many of the respondents had experienced some sort of information literacy instruction. While these numbers are low, they reflect the involvement on the part of Christopher Center librarians in outreach and instruction, since respondents had been on campus only six to eight weeks at the time of completing the survey. Since transferring, 40.5% (n = 15) reported having participated in formal IL instruction, with a librarian visiting their class (Q. T3). 37.8% (n = 14) had received information about the librarian at some point while transferring into the university (Q. T1), and 40.5% (n = 15) had spoken with someone from the library at summer orientation, during the months prior to fall classes (Q. T2).

RQ 1: IL Instruction Experiences and Academic Integration at One's Current University

RQ 1 asks whether information literacy instruction contributes to a student's academic integration at her/his current university, by helping the student develop a sense of belonging at an institution. To explore this question, the author performed a series of eight ANOVA tests: one each for the four pre-transfer attitudinal outcomes (Q. P4, P5, P6 & P7), and one each for the four post-transfer attitudinal outcomes (Q. T4, T5, T6 & T7). For the pre-transfer tests, the independent variables were the responses to questions P1, P2 and P3, measuring students' IL instruction experiences at their previous institutions. For the post-transfer tests, the independent variables were the responses to questions T1, T2 and T3, measuring students' IL instruction experiences since transferring to Valparaiso University. At the 0.05 alpha level, none of the ANOVA tests showed significant differences between those who had a particular previous IL experience and those who had not. The most significant differences were found among reported levels of confidence with conducting research at one's previous institution, question P4 ($F = 2.196$, $p = 0.1064$). The F values for all other ANOVA tests were even less significant.

The author then conducted a series of t-tests, to examine whether any individual experience variables had significant correlation with individual attitudinal variables. Table 1 presents t-test results for the pre-transfer variables, and Table 2 presents t-test results for the post-transfer variables. Statistically significant differences were found in two instances. Respondents who had participated in a traditional, in-class library session at their previous institutions (Q. P1) reported significantly higher levels of confidence with finding sources for assignments at their previous institutions (Q. P4) ($t = -2.433$, $p < 0.05$). Also, students who had received traditional library instruction since transferring to Valparaiso University (Q. T3) reported significantly higher levels of confidence with finding sources in their current classes (Q. T4) ($t = -2.751$, $p < 0.05$).

[Insert Table 1]

[Insert Table 2]

It should be noted that, on average, students who had received information about the library while transferring (Q. T1) answered *Yes* more frequently when asked whether Valparaiso University would be a "good fit" for them (Q. T7). However, this correlation was not strong enough to be significant ($t = -1.609$, $p = 0.117$).

Question 2: Previous IL Instruction Experiences and Post-Transfer Academic Integration

Whereas the first research question is concerned with information literacy instruction's general positive effects, the second research question deals more specifically with the transferability of these effects. Essentially, does IL instruction produce lasting benefits in the form of transfer student capital, which would help a transfer student acclimate to their new university setting? To explore this question, the author performed a series of four ANOVA tests, one for each post-transfer attitudinal outcome. The responses to questions P1, P2 and P3, measuring students' IL instruction experiences at their previous institutions, were the individual variables, and the responses to questions T4, T5, T6 and T7, measuring students' sense of academic integration at Valparaiso University post-transfer, were the dependent outcome variables. At the 0.05 alpha level, none of the tests showed significant differences between those who had a particular previous IL experience and those who had not (Powell, 1997, p. 194).

Subsequently, the author conducted a series of t-tests, to determine whether any individual pre-transfer experience variables had significant correlation with any individual post-transfer attitudinal outcomes. No differences were found to be significant at the 0.05 alpha level. Table 3 provides t-test results for post-transfer attitudinal differences between respondents who had experienced a particular pre-transfer IL experience and those who had not.

[Insert Table 3]

Question 3: Transfer Students' General Information Preferences

The majority of respondents (75.7%, n = 28) believed that transfer students need information about how to conduct library research at their new universities (Q. G1). Notably, students who responded "No" to this question (n = 8), indicating that transfer students do not need to learn how to use their new library, also reported significantly higher levels of confidence in finding sources (Q. T4) ($t = -2.762$, $p < 0.05$).

In response to question G2, transfer students indicated their preferences for the format in which they might learn about the library. The results are presented in Table 4. Respondents were permitted to choose more than one option, so percentages total to more than 100 percent. 37 respondents completed this section of the survey. The top choices were: *In a small group setting* (51.4%, n = 19); *On my own, exploring a website about the library* (45.9%, n = 17); and *On my own, reading an email from the library* (35.1%, n = 13). The only option that received lower than five votes

was *Emailing one-on-one with a librarian* (10.8%, n = 4). Only one respondent indicated that she would prefer not to receive any additional information about the library.

[Insert Table 4]

Question G3 asked respondents about the ideal time frame for transfer students to receive information about their new library. Respondents could select only one option. From most to least popular, responses included: *1 or 2 weeks after classes start* (35.1%, n = 13); *During the first week they are on campus* (27%, n = 10); *In the weeks leading up to the new school year* (13.5%, n = 5); *When they are first admitted* (10.8%, n = 4); *During summer orientation* (8.1%, n = 3); *Around mid-terms of the first semester* (2.7%, n = 1); and *This information would not be useful to transfer students at any time* (2.7%, n = 1).

Discussion

The data analysis indicates that the library's role in transfer success is limited but important. Taken in the aggregate, through the lens of ANOVA testing, the IL instruction variables did not have a measurable impact on students' sense of confidence or integration. However, when the variables were examined individually through t-tests, traditional library instruction was shown to have a significant impact. Students who had received formal, in-class information literacy instruction were more confident in their abilities to find sources for their current classes. Respondents reported this benefit both with regard to their previous institutions (pre-transfer) and to Valparaiso University (post-transfer). These findings suggest that traditional information literacy instruction produces immediate and profound benefits to students' levels of confidence.

However, the findings do not suggest that these effects are transferrable. Transfer students seem to derive no measurable attitudinal benefits from any IL instruction they had received at their previous institutions. Even defined broadly to include one-on-one research consultations and basic interactions with library staff, IL instruction does not appear to contribute to transfer student capital (Laanan et. al, 2010).

Although IL instruction was shown to have a measurable benefit at one's current institution, the author expected to see this impact reflected not only in students' confidence levels but also in their sense of connectedness to academic resources or belonging on campus. Presumably, students who have learned how to use the campus library should also feel a sense of academic belonging. In fact, students who had received information about the library during the transfer process were indeed more likely to say that Valparaiso University was a "good fit," but the t-test results were just above the limits of the study's confidence level. Thus, while the findings suggest that formal IL instruction has a positive impact on students, better data is needed to determine whether this impact reverberates to the level of academic integration.

The respondents overwhelmingly believed that transfer students need information about how to use their new library. Only those students with measurably higher levels of confidence felt that this information was not important. This finding suggests that transfer students are generally thirsty for information about the resources on their new campuses, but that resistance to the library's outreach efforts might come from a small but sizable cohort of overly confident students. Expecting this resistance in advance can prepare librarians to be flexible in how they reach out to incoming transfer students, allowing certain students to opt out of this information.

In sharing their format preferences for learning more about the library, respondents clearly away from situations in which they might be singled out, such as meeting or emailing one-on-one with a librarian. Rather, they preferred small group settings, which offer the protection of their fellow transfer students' companionship, or private communications, such as exploring a website or email on one's own, without the expectation that they would need to interact directly with another person. The respondents indicated that the critical period for the library to engage with transfer students is a window of about two and a half weeks: from the time they arrive on campus, through the second week of class. Earlier time frames, such as during summer orientation or upon admittance to the university, and later options, such as at midterms, were far less popular.

Conclusion

The project aimed to investigate the academic library's role in supporting transfer student success, specifically by providing information literacy instruction. Building off Tinto's (1975, 1993) concept of academic integration, the author surveyed incoming undergraduate transfer students, to determine whether students' information literacy instruction experiences contributed to their sense of academic integration, whether at their previous institutions or in the few weeks since arriving on their new campus. The study also built off Laanan and colleagues' (2010) concept of transfer student capital, to determine whether students' previous, pre-transfer IL instruction experiences helped them adjust to their new transfer university. Analysis of the survey data revealed that IL instruction provides immediate benefits to students, by raising their levels of confidence in doing research. However, the findings do not adequately demonstrate that this benefit has a impact on a student's sense of academic integration; students' experiences with IL instruction did not significantly affect their sense of belonging or connectedness. Furthermore, the data do not suggest that IL instruction provides a long-lasting benefit, in the form of transfer student capital. Transfer students who had participated in library sessions at their previous institutions seemed to feel no more confident or academically connected at their new university than those who had not.

Beyond the questions of integration and capital, the study also sought to uncover transfer students' general perceptions about their need for information about the library, and their preferences for when and how to receive this information. Transfer students overwhelmingly believed that they, as a population, need information about their new academic library. To receive this information, they preferred small group

settings and modes that allowed them to remain anonymous, such as by reading emails or viewing websites, rather than one-on-one situations with library personnel. Most respondents believed that the crucial period for transfer students to learn about the library was when they first arrive on campus or during the first two weeks of class.

Implications for Librarianship Practice

This study provides important insights for librarians' outreach efforts to transfer students. Most incoming transfer students are curious to learn more about the library at their new campus, and they do not mind being singled out as a specific group. In fact, the top preference for receiving this information was in a small group setting, as compared to in a large classroom setting. This preference suggests that transfer students want to learn more about the library, as part of a cohort of other incoming transfer students. The timing for outreach to transfer students is also important. Whereas the author's library previously had focused its outreach to transfer students during summer orientation, students would rather wait until arriving on campus before learning about the library. The findings reinforce what we librarians might have suspected all along: that knowing how to use library resources increases student confidence in their coursework. For librarians who are appealing to campus stakeholders, attempting to gain access to transfer students for outreach purposes, this information could be useful in making your case.

Limitations and Implications for Research

While this study provides insights into the connections between information literacy instruction and academic integration, further research is needed to verify these findings and counteract the study's many limitations. This study was primarily limited by the size of its surveyed population, and it is not safe to generalize these findings to all undergraduate transfer students. Future studies should survey incoming transfer students across a broader spectrum of institution types and sizes. The study was also limited by the scope of its inquiry. If a larger pool of responses were gathered, future studies could test how academic integration is affected by a greater array of variables, such as the quality or extent of previous IL instruction experiences, demographic factors, or whether a student lives on or off campus. As libraries continue to explore new ways of assessing their impact, the area of transfer student success deserves further consideration.

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Appendix 1: Survey Questions and Response Options

Demographic Questions:

D1. Please select your age: 18 -19; 20 - 21; 22-25; 26+

D2. Please select your gender: Male; Female; Prefer Not to Answer

D3. From which type of institution did you transfer?: Community college; U.S. 4-year college or university; International university; Other

D4. Before you came to Valparaiso University, how long had it been since you last took a college course?: Less than one year; 1 - 2 years; 3 - 5 years; 6 years or more

D5. Are you a commuter student?: Yes; No

Previous Institution:

P1. At your previous college or university, did you ever attend an instruction session with a librarian? (The librarian might have visited your class, or you might have visited a classroom in the library.): Yes; No; Not Sure

P2. At your previous college or university, did anyone from the library ever show you how to use the library's website to find sources?: Yes; No; Not Sure

P3. At your previous college or university, did you ever talk or email with a librarian in order to get help with an assignment?: Yes; No; Not Sure

P4. At your previous college or university, how confident did you feel finding sources for class assignments?: Very confident; Somewhat confident; Not very confident; Not at all confident

P5. At your previous college or university, how did you feel about the difficulty of the coursework (classwork, assignments, tests)?: It was too easy for me; It was somewhat easy for me; It was somewhat challenging for me; It was too difficult for me.

P6. At your previous college or university, did you feel like you had access to a "support system" of academic resources, such as study groups, tutoring, a writing center, or professors' office hours?: Yes, I felt very connected to an academic support system; Yes, I felt somewhat connected to an academic support system; No, I felt somewhat disconnected from an academic support system; No, I felt completely disconnected from an academic support system.

P7. Was your last college or university a good fit for you academically?: Yes; No; Not sure

Transfer Institution:

T1. While you were transferring into Valparaiso University, did you receive any information or marketing materials about the library and its resources?: Yes; No; Not sure.

T2. While you were attending summer orientation (FOCUS), did anyone from the library talk to you about the library's services or how it serves students?: Yes; No; Not sure.

T3. Since starting classes at Valparaiso University, has anyone from the library spoken to your class about how to do research?: Yes; No

T4. How confident would you feel finding sources for assignments in your current classes?: Very confident; Somewhat confident; Not very confident; Not at all confident

T5. At Valparaiso University, how do you feel about the difficulty of the coursework (classwork, assignments, tests)?: It is too easy for me; It is somewhat easy for me; It is somewhat challenging for me; It is too difficult for me.

T6. At Valparaiso University, do you feel like you have access to a "support system" of academic resources, such as study groups, tutoring, a writing center, or professors' office hours?: Yes, I feel very connected to an academic support system; Yes, I feel somewhat connected to an academic support system; No, I feel somewhat disconnected from an

academic support system; No, I feel completely disconnected from an academic support system.

T7. Do you think Valparaiso will be a good fit for you academically?: Yes; No; Not Sure

Transfer Students' General Preferences:

G1. Do you think incoming transfer students need information about how to use the library for research at their new universities?: Yes; No; Not sure

G2. What would be your preferred format for learning more about the library?: On my own, exploring a website about the library; On my own, reading an email from the library; On my own, reading a print resource, like a brochure; Meeting one-on-one with a librarian; Emailing one-on-one with a librarian; In a larger classroom setting; In a small group setting; I would prefer not to receive any additional information about the library

G3. When would incoming transfer students prefer to learn more about the library?: When they are first admitted; During summer orientation; In the weeks leading up to the new school year; During the first week they are on campus; 1 or 2 weeks after classes start; Around mid-terms of the first semester; Some other time; This information would not be useful to transfer students at any time