



Capturing the Elusive: Collecting Post-graduation Data from Low-Income High School Students

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Abstract

Tracking socioeconomically disadvantaged students after high school graduation presents significant problems for data collection. In particular, low-income high school graduates who are not continuously enrolled in college have a diverse array of life experiences that makes them difficult to contact and unlikely to respond to research surveys or participate in interviews. The Connector Study is an attempt to increase and enrich outcomes data in a longitudinal study of low-income graduates of a national network of innovative high schools by gathering alumni updates from high school teachers and mentors who remain in touch with their former students. Between one and half and two years after they worked with groups of students in high school, these individuals were able to provide outcome information for 96% of the Big Picture Learning graduates we asked them to discuss. Qualitative telephone interviews with connectors covered students' educational, job, personal, and civic lives. Coded data revealed both high rates of college attendance and disorderly, "swirling" higher education participation. The Connector Study strategy offers a feasible method for collecting quantifiable outcome measures for longitudinal studies. This method also provides information about student change and individual circumstances that is difficult to obtain from students themselves and that goes beyond the basic outcome indicators available through state student tracking systems.

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State accountability systems are increasingly able to match student high school data with higher education outcomes and, in some cases, employment information (Aldeman, 2010; Data Quality Campaign, 2011). Even the few states with complete data systems, however, are unable to track students who cross state lines for higher education or work. State-level tracking systems cannot detect personal circumstances that affect students or provide outcome indicators beyond higher education status and (in a few cases) job standing and wages. Nor can such data systems evaluate cross-state initiatives such as high school networks that are part of the national small schools movement (Ayers, Klonsky, & Lyon, 2000). More in-depth, national-level studies are necessary to evaluate the success of innovative school designs. The National Student Clearinghouse college enrollment data system solves the problem of cross-state higher education participation but offers no information about the out-of-school lives of students or non-enrolled high school graduates. Additional data collection is needed to trace the outcomes and decision processes of students who choose work, volunteering, or travel after high school. Without qualitative information, it is impossible to judge whether students are pursuing upwardly mobile pathways outside of formal higher education, for instance, or whether they have sound reasons for postponing or deciding against college. Similarly, college entrants' capacity and commitment to remaining in higher education is impossible to discern from enrollment statistics but is essential to understanding their likelihood of college success. For these reasons, focused, mixed-method longitudinal studies of low-income graduates from particular types of schools are better positioned than state-wide tracking systems to connect the individual circumstances of students' lives, specific high school distinguishers, and the full range of educational, career, personal, and civic adult outcomes.

The Problem: Tracking Low-Income Students

State data tracking systems have limitations, but are able to cover virtually all state residents. In contrast, social science researchers face major challenges in obtaining high response rates in original longitudinal data collection. In particular, low-income students without a family history of higher education frequently have life experiences that make them difficult to contact and unresponsive to requests to complete surveys or participate in interviews (Weitzman, Guttmacher, Weinberg, & Kapadia, 2003). Innovative methods of collecting longitudinal data on low-income populations are needed to overcome the problems of respondent attrition that are characteristic of all repeated measures studies and are particularly severe in research on marginalized groups.

Tracking low-income students' life trajectories is imperative in light of persistent levels of poverty and associated individual and social problems in the United States. Although U.S. college enrollment rates are rising, gaps in college enrollment by family income are particularly pronounced and remain stubbornly resistant to change (Bailey & Dynarski, 2011). The college enrollment and success rates of economically and educationally challenged youth (Walpole, 2007) occur within a complex ecology of overlapping educational and out-of-school environments (Perna, 2006; 2007; Thomas & Perna, 2005; Tierney & Venegas, 2007; 2009). Educational reform efforts to address socioeconomic gaps in educational attainment include a significant national movement of small, personalized high schools that attempt to build strong connections that reach across student environments between adult staff and students (Ayers, Klonsky, & Lyon, 2000).

In-depth, longitudinal information about the characteristics and educational experiences of low-income, first generation students is necessary both for evaluation of innovative educational

models and for basic research about the conditions that perpetuate the socioeconomic achievement gap. Regardless of scale or method, longitudinal studies are expensive and challenging to conduct (Thompson & Holland, 2003; White & Arzi, 2005). The problem of participant attrition presents a threat to validity in virtually every longitudinal study. Research on drop-outs from longitudinal studies—subject mortality—shows that attrition is not random (Arzi, 1989; Cotter, Burke, Loeber, & Navratil, 2002; Fitzgerald, Gottschalk, & Moffitt, 1998). Participants in a longitudinal study are more likely to drop out if they are geographically mobile, mistrustful of institutional authority, or experiencing difficulties in their lives, particularly in areas they perceive as central to the research study (Van Beijsterveldt et al., 2002; Young, Powers, & Bell, 2006; Weitzman et al., 2003). This study aimed to discover whether there were more effective methods for collecting longitudinal data regarding the post-high school and higher education experiences of these low-income students. The Connector Study and its parent longitudinal study discussed here are conceptually positioned in the literature on the antecedents and consequences of socioeconomic inequality in educational attainment.

The Big Picture Longitudinal Study

The Connector Study is a two-year data subset of the Big Picture Longitudinal Study (BPLS). Begun in 2006, the BPLS follows graduates of Big Picture Learning schools, a growing national network of small, innovative high schools that has gained national attention for success in graduating urban low-income students of color and working in partnership with students to assure their admission to college (Levine, 2002; McDonald, 2005). Big Picture graduates are highly unusual among low-income urban youth, however, in their experiences of a positive, personalized, real-world-based high school experience that supports them in aspiring to higher education and helps them succeed in gaining admission to a 4-year college. For example, Big

Picture students remain together in a small ‘advisory’ with the same teacher for four years and engage in extensive internships to which their academic work is connected. Given the personalization and sustained contact between students and adults, Big Picture high school students typically develop relationships with their advisors and mentors that continue past graduation. Every Big Picture student takes college entrance examinations, applies to colleges, and completes financial aid applications. With slight variations across schools, 95-100% of Big Picture students are accepted into college with financial aid (Arnold et al., 2009; Levine, 2002; Washor, Arnold, & Mojokowski, 2008).

In collecting data on these students, between two-thirds and 95% of the 2006-2011 Big Picture graduates from 23 schools completed baseline high school exit surveys about their college admission and enrollment plan in the month before graduating from their high school. Seniors’ advisors have also responded to surveys on each graduating student in roughly the same percentages. A follow up survey of students was conducted the October after graduation. For these surveys, however, the response rate dropped to approximately a third of the students. Furthermore, discrepancies emerged in comparisons of student self-reported responses and enrollment data from the National Student Clearinghouse (NSC) Student Tracker. Of those that did respond to this October survey, responses were dominated by Big Picture graduates who were following their high school senior college plan, were enrolled full time in four-year colleges, and reported doing well academically and socially at their institution. College-reported Clearinghouse data showed that the October survey respondents were disproportionately self-selected from the highest achieving members of that year’s graduating high school class. Additionally, a subset of the graduates never received the First Fall Update survey because of obsolete email contact information. In sum, findings show that

attrition in the first six months of the study is systematically skewed so that highly involved and successful college attenders are more likely to respond to post-high school surveys than less involved undergraduates and non-college peers. The literature on longitudinal study attrition has been borne out: students who are less conventionally successful have been far less likely than their peers to remain in the Big Picture Longitudinal Study.

Method

To address these concerns, the Big Picture Longitudinal Study pioneered a new data collection strategy called the Connector Study, which goes beyond the information available in state tracking systems while overcoming the problem of low response rates in longitudinal research studies. Building on enduring close relationships between students and their high school mentors, a research team conducted phone interviews with ‘connectors:’ former high school advisors (teachers) and other adults who were identified by principals as likely to be in touch with their former students two years after high school. The population for the study included graduates from the 15 Big Picture schools that had baseline study data from the Classes of 2008 and 2009 for the majority of their students as high school seniors. The data for the Class of 2008 was collected in the spring of 2009 through spring 2010. Data for the Class of 2009 was collected in the spring of 2011 through 2012. Follow-up for the Class of 2009 occurred between October 2011 and March 2012, between two and three years after the students had graduated, in order to allow time for students’ paths to develop while still enabling researchers to locate connectors.

The study research associate contacted each principal to ask for the names and contact information of the adults who might have information about the students two years previously. In most cases, these adults were the students’ advisors who had worked with the

alumni in the Big Picture high school advisories. In a few cases, the identified connector was a college counselor or school administrator who kept track of this information for the school. The Class of 2008 study was conceptualized as a pilot. We were able to gather data from eleven connectors at eleven schools (92%). From the pilot we concluded that this was an effective way of gathering information and decided to continue with the study by collecting data for the Class of 2009. For the Class of 2009, fourteen of the schools (93%) provided information about connectors. No principal refused to give the information, but one never responded to repeated phone and email requests. Two principals gave the research team the contact information but were hesitant to ask their staff members to participate due to their heavy workloads. The study data derives from 21 connectors and includes full information from 11 schools and half from a twelfth. Reasons for not being able to complete data collection from individual connectors included: (1) no response to email requests, and (2) connectors not having information about that particular group of students.

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Following an orientation to the study and interview training, the study research associate and a team of doctoral students set up appointments with the connectors for half-hour phone interviews. Short oral interviews were designed to accommodate the busy schedules of the connectors and due to their voluntary participation. Only two connectors contacted did not participate in the study likely due to lack of time rather than an unwillingness to be interviewed.

For each student associated with the connector, interviewers asked the following baseline questions:

- What is that student currently doing? (College, job, personal, civic)
- What else, if anything, have they done since high school graduation?

- How are they doing, academically and personally?
- Are there any salient trends or patterns in this particular advisory or class year?

Most of the connectors based their interview responses on informal knowledge of their students' activities. Their updates came from being in contact with students directly, through Facebook, and through second-hand reports. Additionally, connectors from two high schools drew from systematic alumni records maintained by their school. The interviewer did not explicitly ask the participant the source of their data, but many revealed this during the course of the interview and subsequent data analysis relied solely on the information provided by connectors. Connectors had different levels of knowledge about given students, and the recentness of information varied by individual student. The interview protocol elicited the major activities and news about each student, along with some judgments of how well he or she was doing. Although their information was not equally extensive across all their students, the level of connection between connectors and their former students was remarkable: they were able to provide at least some information about the current lives of 544 students out of a total of 563 students in their schools or advisories (96% of all eligible students). Additionally, some connectors were able to provide information about students who were not originally recorded in the research team's sample.

Researchers entered text about each conversation into a spreadsheet that had been populated with information about the student, school, and advisory. The research team analyzed the data by coding the accounts of the 544 students into numerical categories to provide quantitative information for cross-sectional results and as outcome measures within the Big Picture Longitudinal Study longitudinal database. The research team set the quantitative coding scheme to capture the answers to our initial questions about students' outcomes and any additional information that connectors had reported. Most of the coding categories attempted to

highlight the students' work or school participation in the years since graduation. Coding included current work status and type. Current higher education status codes included the extent of college enrollment, type of institution, and college performance. When connectors reported that students were struggling academically in college, coders typically had enough information to code the reason(s), such as financial difficulty, family problems, pregnancy, etc. Coding also included future plans, such as military, college, career, job, and baby/family. Given the information collected, researchers were able to distinguish non-career-related jobs from career-related positions that built professional skills and credentials in a student's area of interest.

In addition to educational and work codes, the team coded the interviews for the closeness of the connector/student relationship, community involvement, student happiness, and whether the student had become a parent. The final two categories dealt with overall assessments of the students' situations: the connector's judgment in light of high school indicators ("exceeding expectations," "meeting expectations," "below expectations") and the coder's judgment of how well the student was doing ("thriving," "mixed," "struggling"). In each case, a code indicated whether there was insufficient information to code a particular category. The research team compared independent coding and met to clarify discrepancies in order to ensure inter-rater reliability.

Following tabulation of frequencies, analyses included cross-tabulations of demographic categories with educational, job, and personal outcomes. For instance, we compared the college outcomes of students who were parents to those without children and investigated patterns in the group of students who had exceeded expectations according to their connectors. Finally, we compared the outcomes of students whose advisories had been marked by various degrees of adversity in high school, according to the responses of connectors. For instance, some advisories

had experienced multiple advisors; others had experienced group cultures that were particularly pronounced in a positive or negative way.

Findings

The quality of information received varied across connectors according to the level of contact the individual had with the student and the data collection method utilized. In some instances, connectors maintained spreadsheets with information on each student that they provided in lieu of participating in an interview. These spreadsheets often contained less information, typically only included the higher education institution the student was attending, if any, and provided little to no contextual information. Connectors participating in interviews were able to provide richer, more detailed contextual information through follow-up questions by the research team. Facebook was frequently used by connectors as a means for gathering information on the students, and a number of these participants actively checked the site during the interviews when asked questions about individual students.

By the Numbers

Information gleaned from the interviews was coded to provide statistics on the students' experiences in their post-high school graduation lives. Overall, for those on whom data was collected, the number of students reported to be currently in college full time was 70.6%, (n=331), part time 9.8% (n=46), and the number of students who were reported as not attending college was 19.6% (n=92). Connectors reported not knowing the college attendance status of 75 of the students (18.8% of the total sample). Of the whole group, 24% of students were reported as having attended college upon graduation but had since dropped or stopped out. Of these students, the most often cited reasons for attrition were financial difficulty (n=7), pregnancy (n=6), family problems (n=6), and academic struggles (n=5). A significant relationship was

found between current work status and current college enrollment status. Among the students (n=64) that were not currently in college, 56 (87.5%) were employed in a full-time job or career position. Full-time students that were also employed full-time represented 17% (n=3) of the sample (n=18).

The sample contained a sex breakdown of 39.5% men (n=215), 59.9% women (n=321), and 1.5% unknown (n=8). Across sex, 85% of women enrolled either full- or part-time in college, while only 72.3% of men enrolled. This is consistent with the literature on college students nationally, since women in this study were more likely than men to attend college (*The Chronicle of Higher Education*, 2012).

Of the students enrolled in college and on whom data was collected, 48.3% (n=180) were enrolled in a four year institution and 35.5% (n=180) were enrolled in a two year institution. Of those enrolled, 94.8% (n=343) were attending non-profit institutions, and 5.2% (n=19) were enrolled in private, for-profit institutions. In keeping with the literature on low-income students, Big Picture graduates are likely to be discontinuously enrolled, drop out, stop out, transfer institutions, and “swirl” among different institutions. As with their peers nationally, community college attenders among the group were more likely to be employed full time and less likely to remain enrolled (Adelman, 1999, 2006).

Data was also recorded on special circumstances that might impact the student’s ability to attend college or find an otherwise successful life path. Of all 544 students, 9.7% (n=53) were reported to already be parents or to be expecting a baby. Of all students, 0.9% (n=5) were reported to have been involved in some type of criminal activity or violence. Students were also highlighted if they represented what the researchers deemed “extraordinary” circumstances, with

the potential for both positive (n=3) and negative (n=27) implications for the student's success. Examples of these students' stories are provided later in this paper.

When analyzing this data further, the research team found a significant relationship ($p < .001$) between parental status and college attendance. Of the students who became parents either during high school or in the two to three years since graduation (n=54), 47.1% (n=16) were not attending college at the time we conducted our interviews. Of this same group, 11.8% (n=4) were attending college part time, while 41.2% (n=14) were attending college full time. Therefore, on the whole, parents were more likely to attend college than not attend college. Contrary to expectations, they were more likely to attend college full time rather than part time. The same analysis was run comparing parental status and current work status; however, this relationship was not found to be significant ($R = .920$). For those parents about whom current work status data was available, the distribution was relatively even across those not working, working part time, and working full time.

Another cross-tabulation was run comparing college status (i.e., enrolled full- or part-time) with the overall advisory class status (i.e., negative, neutral, or positive). This comparison revealed no significant difference. In other words, a positive advisory was not an indicator of greater college enrollment; likewise, students from advisories classified as negative did not attend college less frequently.

Major Themes

Connectors were able to provide the researchers with fuller and richer data on each of the students that is not captured through many of the more traditional means of data collection. When reviewing the data, four major themes and advantages to this data collection emerged, including:

- Understanding students stories in context
- Identifying students surpassing expectations
- Understanding the story-behind-the-story
- Identifying students contributing to the community and following their passions

Under the first theme, the Connector Study allows researchers to put the students' stories into context to understand what success means for each individual student, based on the indications given by the connector. For example, a connector spoke about a student whom she considered to be doing very well post-high school, despite not being in college. She explained that this student has Asperger syndrome, which provides essential context for assessing his current job as a forest service employee who is "working with his hands." Without that qualifying data, this student may be deemed unsuccessful because he did not go on to college. However, for him, obtaining a job he enjoyed and can excel at was a true measure of success.

Many of the students in this study have faced significant difficulties in their lives. Of those judged by the coding team to have experienced extraordinary negative circumstances (n=20), only one has overcome these difficulties and is now considered to be thriving: this is the previously mentioned student with Asperger syndrome who works a full-time job in a field that he enjoys. Other students from this category are finding "mixed" success (n=9); these students have faced problems such as learning disabilities, citizenship issues, deafness, illness, and severe injury, including being shot. Some of these students are taking classes at community colleges and four-year institutions (n=5). For the purposes of this study, it is important to put success in the context of these students' worlds and the data collected via the Connector study allows us to do this. The negative circumstances facing this particular subsection of students could have been

severe barriers to pursuing a college education or finding a job. However, despite these setbacks, 50% (n=10) of them have persevered, making the most of what is often a very difficult situation.

The next major theme relates to students who were surpassing expectations. While similar to the previous theme of understanding what success means for each student, this theme also takes into account connectors' judgments of each student. For instance, a connector characterized a young teen parent who never pursued any higher education and had a low-wage job as a success. This student, his former advisor said, was involved in gang violence throughout high school; as the connector stated, "we just wanted to keep him alive, and he barely graduated." Considering the student is now employed and "focused on being a father," this is an unexpected success story given his prognosis in high school. Researchers also learned the story of a young woman who "was never very stable" during high school, who the connector indicated is now doing better than previously expected while working as an assistant manager at a fast food restaurant. Another connector noted a similar young man at another high school, who is "staying out of trouble and harm's way;" this kind of information reveals considerable growth for the most at-risk students, demonstrating that quantitative data about college enrollment might not be telling the full story about this demographic.

The Connector Study was also able to bring to light a third theme, where researchers learned the story behind the story. Connectors interviewed with this method are able to shed light on baseline characteristics of both individual students and advisories that may provide context for their situations. One former advisor discussed a student who had been in and out of community college as a "classic under-achiever" with characteristically strong ability and weak performance. Knowing that he struggled in high school and that his father died during his senior year fills out the picture of this student's overall trajectory. Another student is in close touch

with his advisor regarding plans to begin community college after a year in AmeriCorps and a year of full-time work. Both the continuing use of his advisor as a resource and his history of following through make this student's postsecondary plan more probable than similar claims from peers. Individual growth and response to adversity contextualize standardized outcomes such as college attainment.

Important nuances also emerge in the stories of students who are following conventional achievement paths. For instance, standard statistics of a positive enrollment status would mask the struggles of a student who has remained enrolled at her highly selective university despite experiencing significant racism on campus. Understanding these stories together helps paint a fuller picture of the story behind the story for each student. While NSC enrollment statistics may have shown the Big Picture graduates who were currently pursuing higher education, they would not have depicted the kinds of hurdles these students had to overcome to remain on campus or even get there in the first place.

While Big Picture schools define "success" in conventional terms, such as educational attainment and adult economic self-sufficiency, civic contributions and personal fulfillment through recognizing and following one's interests and passions are equally important goals of Big Picture Learning. The fourth theme discovered in Connector Study data concerned students who were contributing to their communities and following their passions. A benefit to using this method is that connectors who know students well are ideally suited to assess these less-easily measured metrics of success. For example, data was collected on a graduate who began a dance program in her community recreation center. She may not have follow the traditional model of success, but she was successful in pursuing her interests and contributing to her community. Another connector told researchers about a student who is volunteering with middle

school students on issues related to the local watershed while working full time at a large chain store; he is also highly successful on the metrics of civic involvement and pursuing personal interests. Neither of these students has begun college, however, and their contributions and accomplishments would remain invisible in studies that measured only typical college and career outcomes.

The study also brought to light many students who were pursuing their passions. The connector for one student, for instance, knew that a particular graduate was not only doing well in a Midwestern college but had also received certification as a personal trainer and was working in the field outside of school. Similarly, a young graduate in California was “living her dream” by studying photography at college and selling her pictures online. Though these students are pursuing higher education and would be captured in NSC data, they may have a longer path to graduation because they are pursuing these side interests that fulfill them personally. Additional students are making steady but slow progress toward degrees because they are combining college with parenthood or taking care of their own parents. Others have successfully entered trades, joined unions, or performed significant community service. When looking at these stories at a whole, it is evident that the Connector Study captured critical information about these students’ lives that would not be evident through the National Student Clearinghouse data.

Understanding the Group Context of the Advisory

Informants’ descriptions of individual advisories are also telling. Maintained over four years, advisories constitute the central social and academic unit of Big Picture schools. In general, advisories tend to develop their own group identity. One connector described their advisory as one where “the overall empathy in the advisory was really strong,” and another indicated that her students “were sweet and encouraging to each other.” In another advisory, a

few students had travelled internationally and shared their experiences with the group. As the former advisor noted, “overall this group had a strong identity and was open to trying different things.” Group dynamics and influential advisory members could also result in negative collective cultures, as in one advisory where “most of the students ‘dibble-dabbled’ in drugs, some of them heavier [than others]” or another advisory with a high concentration of pregnancies. Less frequently, some advisories experienced changes in advisors over four years. Baseline information on advisories enabled investigation of whether the nature of a particular 4-year advisory affected student outcomes. Interestingly, positive or negative advisory qualities did not make a statistically significant difference in any of the measured educational or personal postsecondary outcomes. This can be interpreted as good news for Big Picture schools and individual students, for whom advisor qualities, staff changes, and group dynamics are largely uncontrollable. At the same time, it is discouraging to consider that the effects of a comprehensive, sustained educational intervention like the advisory system are overpowered by non-educational factors.

Discussion

Big Picture Student Overall Outcomes

According to connectors, 60% of the 544 Big Picture Learning high school graduates from the classes of 2008 and 2009 are in college. Among the overall population of low-income, first-generation, students of color from which these graduates come, this is a very positive percentage. Moreover, many of the students who are not currently enrolled in post-secondary education have previously taken at least some college classes and many say they plan to start or re-enroll in college. Many of the non-enrolled students are working at living-wage jobs,

including several students who had full-time jobs in organizations where they had been high school interns. Only a few of these jobs offered career ladders to the middle class, however.

Big Picture graduates struggle with the range of issues that keep low-income students from achieving college success (Arnold, Lu & Armstrong, in press). Financial issues, for instance, dominated stories of students' educational choices. One connector said that two-thirds of her students were accepted to a 4-year college but most chose to attend a community college. Another connector concurred, saying that many students have the motivation but cannot afford the college they want to attend. Students continue to provide support to their families of origin as well as support their own children. Management of money is a problem, as with a student who had to drop out of college after a semester because she sent her family the financial aid check meant to cover her housing. According to her advisor, "she had never seen that much money before."

The 10% of students who were parents struggled to manage time and money to stay in school. Many students had significant personal or family problems; smaller numbers struggled with alcohol or drug addiction, criminal involvement, or problems related to undocumented immigrant status. Cultural issues appeared rarely in connector stories, although there were students who could not attend the college of their choice because their parents did not want their children leaving home. More frequently, students left their first college because they wanted to return home. Similar to the national demographic groups to which they belong, high rates of transfer, discontinuous enrollment, and swirling among institutions characterize this sample of high school graduates (Adelman, 1999; 2006).

Problems in academic readiness for college came up in the conversations in discussions of advisories. For instance, a connector in New York City said that many 2009 graduates had

great difficulty passing the required state Regents examination. A California connector said that much of the transfer from 4-year colleges to community colleges was motivated by the state requirement that students who failed to meet basic math and English requirements in their baccalaureate institution were required to complete remedial courses at a community college. According to the data collected, students did not seek out their high school advisors for help when they were struggling academically in college.

In short, the picture of outcomes is complex and far from complete. There are encouraging signs that Big Picture students are pursuing higher education in greater percentages than their demographic peers nationally. Many of those who are not in college are pursuing personal interests, supporting themselves and others, and embarking on viable careers in the military and in trades. However, a Big Picture high school education and secondary school diploma does not prevent alumni from experiencing disorderly paths through higher education, financial struggles, early parenthood, and a range of issues associated with poverty.

The Connector Study as Method

It is clear that Big Picture high school advisors and other staff continue to remain in contact with their former students after graduation and that their accounts of alumni activities can provide invaluable qualitative data for longitudinal studies tracking low-income students. Not only did connectors have information about students in and outside of higher education, they were able to describe student trajectories over time, and provide informed assessments of how well they were doing. Every connector we reached had knowledge about his or her graduates and was willing to share this information in a half-hour phone interview. The length and oral format of the interview offered a convenient and manageable way for connectors to share information about all of their students. We assumed that connectors would prefer this method

over writing their responses on a survey or spreadsheet. This assumption was borne out in the case of the single connector who repeatedly said she would prefer to send information in written form but did not follow through despite repeated phone calls and email reminders. Overall, this method resulted in a high response rate and high rate of coverage, which resulted in collecting data on 96% of the students for these class years. The phone method worked well, and speaking to connectors gave provided context for success on each student, whether they were in or out of higher education.

Despite the advantages of this data collection method, using connectors has challenges and limitations. First and foremost, all information is secondhand and potentially out-of-date because it relies upon the last time the connector may have had an interaction with the student. Ideally, researchers should collect information directly from students, typically in the form of standardized surveys or interviews. Without incentives, however, low-income high school graduates are highly unlikely to participate in research studies. For instance, organizations like the Hispanic Scholarship Foundation that make continuing grant payments contingent on student survey responses are able to achieve high student response rates. In the absence of these requirements and incentives, however, data collection proves difficult as was the case in the BPLS. Even scholarship organizations, however, have no leverage for reaching students who are not attending college.

Although willing to participate in the study, connectors were often difficult to locate and reach. Names and contact information necessarily came from schools, and it took much longer to obtain information than originally expected. Some connectors had left their schools and there is often a high rate of advisor turnover; however, the team was able to contact a few who were still in contact with their students and willing to participate. Although the connectors reached

were receptive, finding an available phone interview time was often challenging. However, utilizing a multi-person research team of data gatherers improved the ability to offer sufficient potential interview times for the busy participants. A project manager contacted schools for lists of connectors and kept track of whether each connector had been located, contacted, scheduled, and interviewed, and the research team follow-up with individual connectors.

Beyond these logistical concerns, connectors had different levels of knowledge about individual alumni. Connectors were closer to some former students than others and their information was, at times, out of date. It is unclear whether connectors shared everything they knew about alumni, as opposed to what they thought was most salient. Additionally, connectors who are in Facebook contact with graduates likely have a different depth and type of knowledge about these alumni than about those they talk to or those they hear about through others. Phone interviewers did use categories and probes asking for information about graduates' educational, work, and personal lives. However, without a standardized telephone survey that covered more numerous categories across each student, it is impossible to know whether connectors might have known something that interviews failed to elicit. Without changes in the interview protocol, the connector study data are not sufficiently standardized to be useful as quantitative variables. This also made it difficult to integrate the data into the larger quantitative set of predictor and outcome variables in the master longitudinal study database.

Conversely, however, an expanded protocol would lengthen the interview and likely lower the response rate among these uncompensated connectors. It is highly likely that incentives and systems would be necessary to enable connectors to collect alumni information more intentionally. The strength of the current connector study method lies in its ability to gather qualitative information about a broad range of alumni in a feasible, cost-effective

way. The resulting data is useful to contextualize quantitative information and to fill gaps in knowledge about students who are not continuously enrolled in college. Such data reveals viable non-college career pathways and other indicators of success that are invisible in typical outcome metrics.

Assessing the Connector Method

The Big Picture Learning educational model is extremely successful in fostering close relationships between students and their high school teachers and advisors. The Connector Study demonstrates that students' connections with adults from their high school continue after graduation and can be useful when tapped for tracking low-income students. Gathering information about high school alumni from adult connectors is an excellent way to collect qualitative data about students, especially those who are not continuously enrolled in higher education. Furthermore, connectors can provide context for alumni outcomes by elaborating on the circumstances of students' lives and considering their trajectories over time.

However, it is not clear to what extent reported enrollment numbers and expressed plans are trustworthy because the data often came from secondary sources, frequently Facebook profiles. In particular, although Facebook may provide valuable access to information about former students, this type of data may be untrustworthy. Facebook profiles are not always up-to-date. Therefore, a student who may have transferred schools after one semester, but had still listed the first school on his or her profile, would be reported incorrectly. Students may also engage in impression management (boyd & Ellison, 2007) and use their profiles to portray a particular image of themselves, playing certain aspects up or down (Martinez Aleman & Wartman, 2009). Additionally, they may not want to reveal that they are struggling academically or that they have transferred from a more selective to less selective school. In this

study, it is unclear if connectors used source such as Facebook as merely a memory aid or as the sole source of information provided. Comparing Connector Study enrollment figures with National Student Clearinghouse data, however, reveals that the Connector Study figures are more accurate in determining discontinuous enrollment. Students are enrolling in college, but only a minority is making steady, full time progress toward a degree.

Although the interviewers did not ask whether connectors provide support to their former students, several of the stories included instances of ongoing advising and assistance. For instance, a connector reported that a former student had a “rough first semester” in college and was placed on academic probation. The connector spoke with the student about going to class and went to the college to see him. The student is now “starting to turn around and doing much better.” This kind of ongoing support occurs as a result of the strong relationships between Big Picture School staff and their former students.

While the Connector Study method certainly has limitations, it is important to note the richness of data it enabled researchers to uncover. While basic facts about college enrollment could be obtained from the NSC data, the Connector Study method was able to describe exactly who those students were and how they were adapting to higher education. In addition, this study has the potential to track students who are not pursuing higher education, as well as bring to light the myriad reasons they may have altered their post-high school plans. This kind of qualitative information is useful for both theory and practice.

Implications

Methodological Implications

The implementation of the Connector Study revealed many advantages to this form of data collection. Although it is time consuming and logistically challenging to connect with an

over-committed population, the results of the Connector Study yielded data about graduates that are not easily attained using other sources. If this type of data collection were to be replicated, there are a number of suggestions for improving the utility and integrity of the data.

First, it is important to identify connectors who can best provide information about the graduates. For the research team's purposes, these were former advisors or individuals from the school community, including guidance counselors and principals still in contact with students from former classes. In general, the closer the relationship between the connector and the student, the richer the data collected. There also may be additional possibilities for finding connectors that were not explored in this study. Mentors in community-based action organizations, job or internship supervisors, or others in the broader community may be additional sources of information. Efficiency, however, would dictate the need to select individuals who possess information about multiple students as opposed to just one or two graduates. Ideally, connectors would connect with multiple students and be proactive in collecting information from their former students. This would likely increase the probability of connectors providing more detailed and reliable data.

Second, data depth and reliability utilizing this method could also be improved with the addition of more detailed and systematic probes for information. After the initial data collection and analysis, the team became aware of new areas and themes in which further information would prove useful. These areas include: student work status while in college, deeper probing of the circumstances surrounding the student's success or struggle, and more explicit requests for contextualizing the student's level of success. Future interviews could include standard questions about connectors' judgment of student success, happiness, and the degree to which students have met the connector's expectations for post-high school outcomes.

Methodologically, it would be useful to know how long ago the connector received the information they shared during the interview and the source of that information, with a particular emphasis on the connector's use of Facebook. Systematically recording demographic data might also prove useful, although in the case of the BPLS, this information was already available through previously collected data. Overall, a standardized semi-structured interview could yield more systematic information for analysis purposes, while also allowing for an understanding of the richness of student experience.

The third suggestion for improving the method involves balancing between the quality of data collected and the time required of an already time-stretched population. During the Connector Study data collection process, in particular, the team was sensitive to advisors' and connectors' time commitments. A major goal of this study was to provide connectors with an accessible and efficient way to collect and share information. Overall, connectors responded positively to the data collection method utilized. Successful data collection relied on connectors' goodwill and intrinsic motivation, although incentives and compensation in different studies might open further avenues for data collection. Some of the schools in the study formally tracked the information collected, but it was often a result of it being a stated part of a staff member's job description. Future studies would be careful to strike a balance between time commitment required from the connector and the depth of information desired by the researchers.

Implications for Practice

The type of information gathered through the Connector Study also has practical implications for individual high schools. The method could provide schools with important data to contextualize ways in which secondary school strategies affect graduates' paths.

Documenting viable non-college career paths or capturing connectors' knowledge about graduates' experiences at particular colleges could provide high schools with additional data on the success of their efforts and those of their graduates. Schools that are able to include an expectation of student tracking into staff job descriptions or assigning the task to a particular staff member may also be at an advantage in continuous program assessment and improvement.

Another implication for practice lies in the ability for schools to provide outreach to graduated students and provide post-high school support. For example, in another study of Big Picture graduates, alumni in a treatment group who received invitations for summer college counseling post-graduation were 14% more likely to matriculate, attend college full time, and attend 4-year colleges than those in the control group who only had access to counseling upon request (Castleman, Arnold, & Wartman, 2012). Specific information about students' post-graduation experiences could help schools tailor outreach and support programs to their graduates.

Conclusion

The Connector Study method provides a promising opportunity for the collection of data on a historically difficult to reach student population. The current methods of tracking the post-high school life of socioeconomically disadvantaged students are lacking in their ability to provide deep, rich, contextualized data in a consistent and systematic manner. By utilizing the relationships students develop throughout high school, the Connector Study method holds promise for bridging this gap. Although the means of collecting this data are more labor and time intensive for the research team, the data the method yields is more thorough and complete when compared to what is currently available.

This “new” data contributes to our knowledge of low-income students in unique ways. Connectors can gauge student success based on student histories and life events in the way national datasets cannot. It provides data on how these graduates thrive outside of college and struggle within higher education in a more contextualized way. Additionally, this data can be collected in a manner that is efficient and time-sensitive for participants and inexpensive for the researchers.

The data collected through the Connector study also revealed important implications for research practice on this student population. Connector relationships with students provide a unique opportunity for research and are, in and of themselves, worthy of study. They also possess implications for practice, including the opportunity for increased support for recent graduates with the potential to increase college enrollment and persistence rates. Continued support of alumni is particularly well suited to college access organizations and small, personalized schools that serve low-income students. The continuing relationships that naturally occur in these settings enable the collection of candid, in-depth information about graduates’ lives’ and the ability to translate this information into effective practice. By utilizing the “Connector Method,” researchers and practitioners can work together to advance the success of a particularly difficult to track population.

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